FOUNDED IN 1856

RAILWAY AGE

THE STANDARD RAILROAD WEEKLY FOR ALMOST A CENTURY

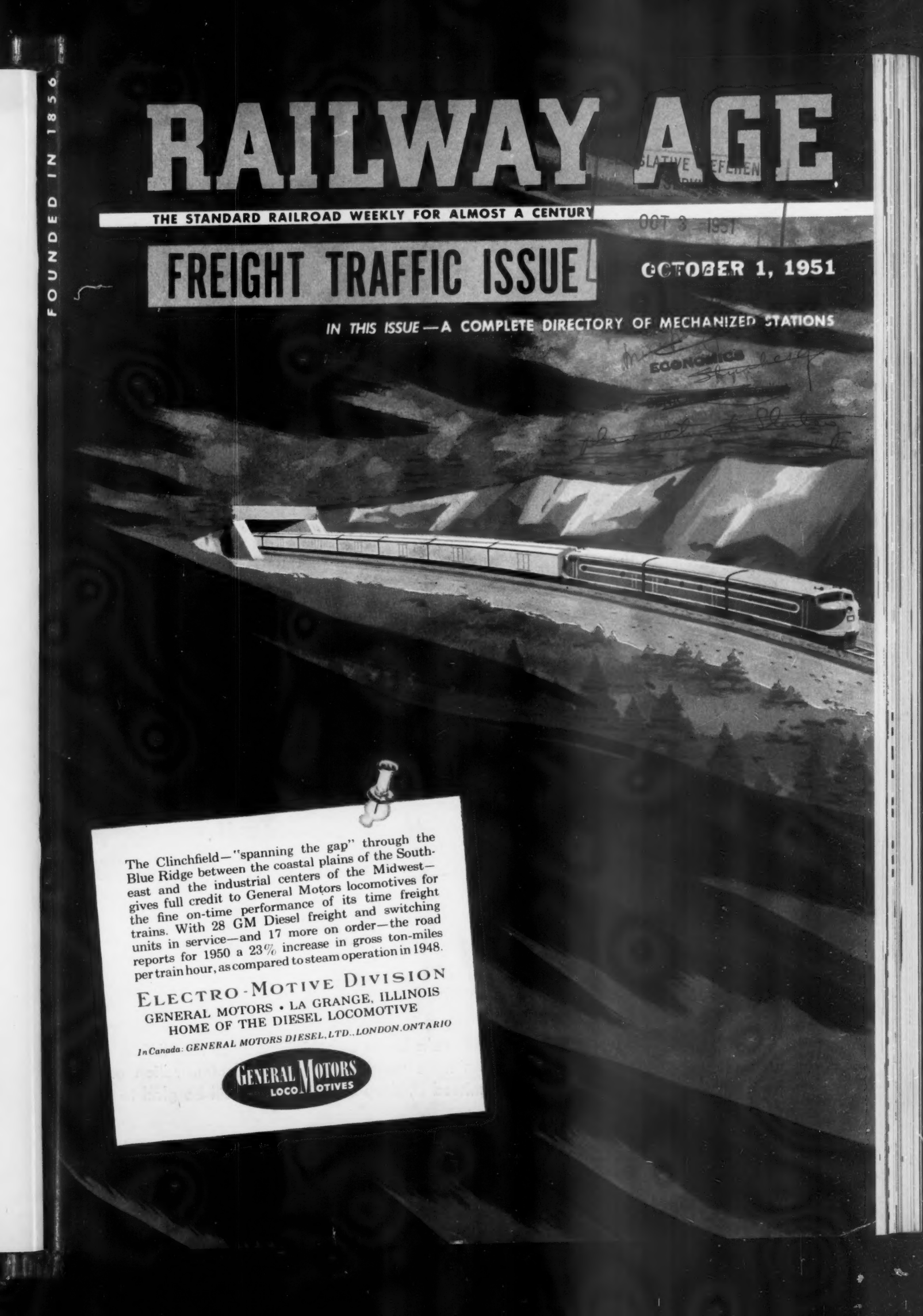
LEGISLATIVE REFERENCE
OCT 3 1951

FREIGHT TRAFFIC ISSUE

OCTOBER 1, 1951

IN THIS ISSUE—A COMPLETE DIRECTORY OF MECHANIZED STATIONS

ECONOMICS

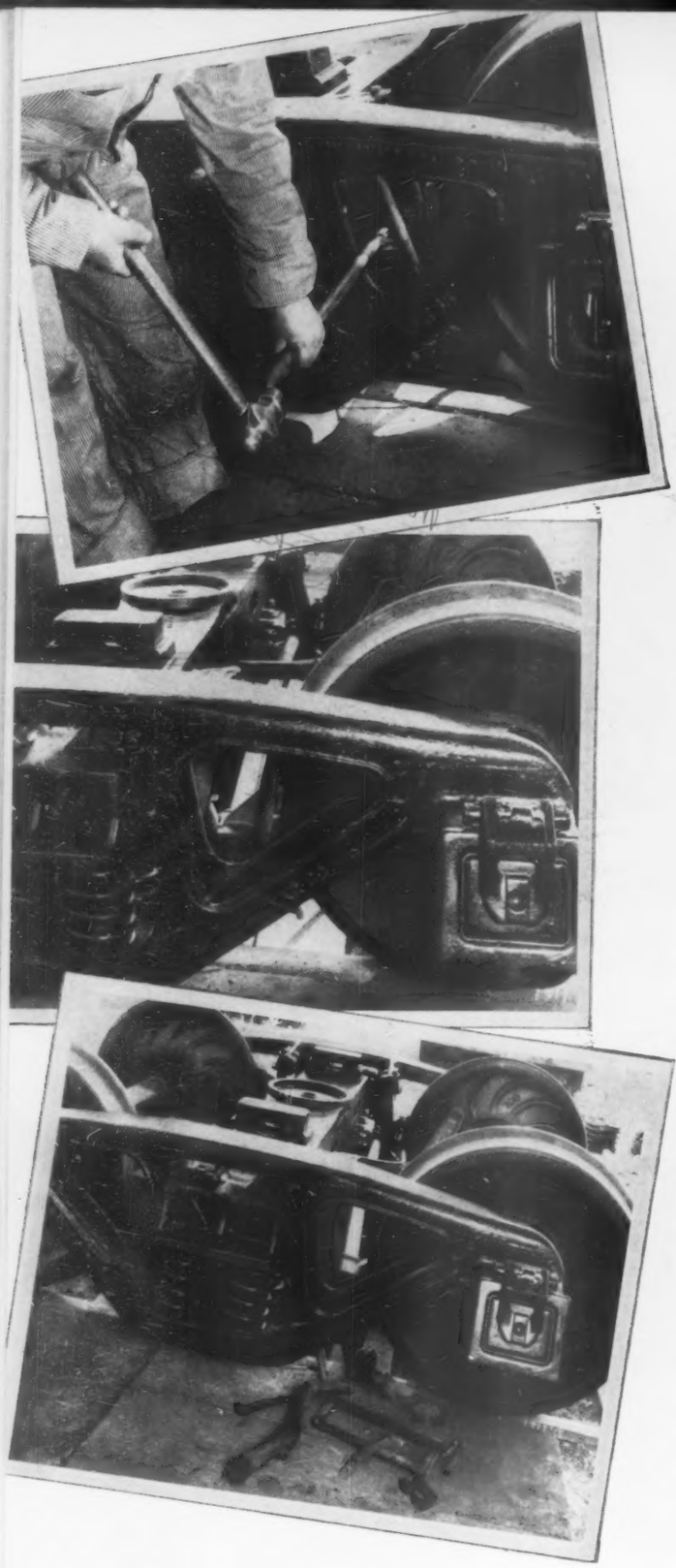


The Clinchfield—"spanning the gap" through the Blue Ridge between the coastal plains of the Southeast and the industrial centers of the Midwest—gives full credit to General Motors locomotives for the fine on-time performance of its time freight trains. With 28 GM Diesel freight and switching units in service—and 17 more on order—the road reports for 1950 a 23% increase in gross ton-miles per train hour, as compared to steam operation in 1948.

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS • LA GRANGE, ILLINOIS
HOME OF THE DIESEL LOCOMOTIVE

In Canada: GENERAL MOTORS DIESEL, LTD., LONDON, ONTARIO

GENERAL MOTORS LOCOMOTIVES



Truslock brake head changes can be made right at the car by removing the self-locking spring key which holds the brake head securely on the Truslock sleeve.

Remove brake shoe in the usual manner, leaving the Truslock Spring Key loosely in place. With brake shoe off, hanger assembly is easily removed.

Pull the spring key out and slide the Truslock "Quick-Change" Brake Head off the sleeve. The beam is now ready to receive a new Truslock Brake Head.

TRUSLOCK is the *only* No. 18 hangered brake beam with this TIME AND MONEY-SAVING advantage. Hundreds of top railroad men have watched an actual demonstration of this amazing quick-change operation. If you missed it, drop us a line and we'll be glad to show you—*any time—any place*!

BUFFALO BRAKE BEAM CO. **NEW YORK**

AFTER 5 YEARS' EXPOSURE...

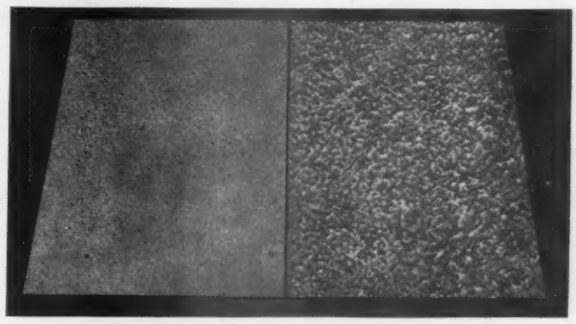
This unretouched photograph shows cross-sections of a carbon steel sheet and a Mayari R sheet after exposure. The photograph is approximately 4 times actual size.

You can see what corrosion has done to these steel sheets. One is plain carbon steel, the other is Mayari R, and both were originally ⅛ in. thick. They were exposed together in industrial atmosphere for 5 years. During this period the carbon steel sheet lost so much through corrosion that it had to be replaced, but there was no appreciable loss of thickness in the Mayari R sheet.

There is a simple reason why Mayari R has such excellent resistance to atmospheric corrosion. When this steel is exposed, a thin, tight layer of rust forms on the surface to act as a protective coating. This rust does not flake off in the manner of carbon-steel rust. Instead, it holds securely to the surface and retards any further corrosive action. As a result, Mayari R has from 5 to 6 times as much resistance to atmospheric corrosion as plain carbon steel, and from 2 to 4 times as much as copper-bearing steel.

Mayari R also has other advantages. It has better abrasion-resistance, higher yield point, and greater tensile strength than ordinary carbon steel. It can be used to save steel, to reduce surplus deadweight, and to increase the service life of equipment and structures.

Our Catalog No. 259 contains more information about Mayari R, its properties and applications. Write or call the nearest Bethlehem sales office for a copy.



The same test specimens as seen from above. After 5 years' exposure the Mayari R is relatively smooth while the carbon steel is deeply pitted.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

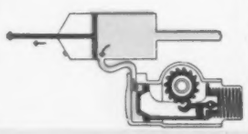
★ BETHLEHEM STEEL ★

Mayari R *makes it lighter... stronger... longer lasting*

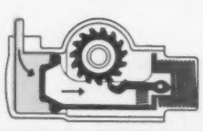
How to cut Big Slack Adjustment Jobs

WESTINGHOUSE TYPE D PNEUMATIC-AUTOMATIC SLACK ADJUSTERS FOR FREIGHT CARS

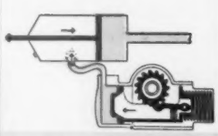
Westinghouse Type D Slack Adjusters eliminate an expensive, time-consuming operation. No manual adjustment is required between brake shoe replacements. Uniform air brake piston travel is maintained at all times. Simple, rugged parts—design proven in many years of passenger service. Positive, dependable cycle of operation is diagramed below.



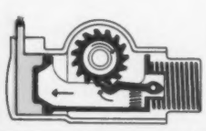
Excessive piston travel in air brake cylinder uncovers port, admits air to slack adjuster cylinder.



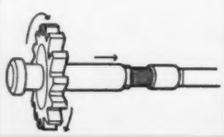
Air pressure moves slack adjuster piston back, compressing piston spring.



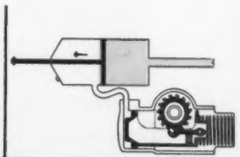
When brake is released, air in slack adjuster piston is vented. Piston spring returns slack adjuster piston.



Pawl on slack adjuster piston engages ratchet nut . . . advances it one notch.



Rotation of ratchet nut turns nut on tie rod, shortening the connection.



Process is repeated with each brake application until proper brake piston travel is established.

Westinghouse Air Brake Co.

AIR BRAKE DIVISION

WILMERDING, PA.

Brakes are Basic to Railroad Progress

Vol. 131, No. 14 October 1, 1951

RAILWAY AGE

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office and Trade Mark Office in Canada.

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Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn., price, $3.00 a year to railroad employees only in U. S., U. S. possessions and Canada, payable in advance and postage free. Subscription price to railroad employees elsewhere in the Western Hemisphere, $10.00 a year; in other countries, $15.00 a year. Two-year subscriptions double the one-year rate. Single copies 50¢, except special issues $1. Address Robert G. Lewis, Assistant to President, 30 Church Street, New York 7.

Editorial and Executive Offices at 30 Church Street, New York 7, N. Y., and 79 West Monroe Street, Chicago 3, Ill. Washington 4, D. C.: 1081 National Press Building—Cleveland 13: Terminal Tower—Portland 5, Ore.: Terminal Sales Building—Los Angeles 17: 1127 Wilshire Boulevard—San Francisco 4: 1204 Russ Building—Dallas 4: 2909 Maple Avenue.

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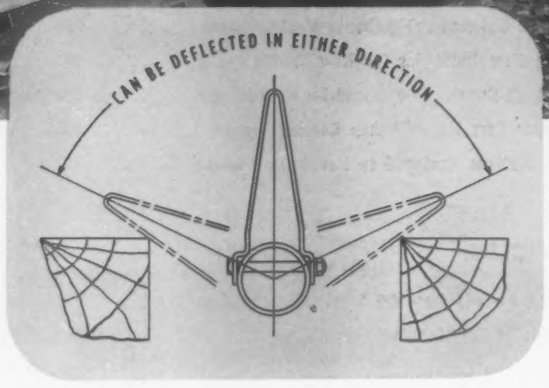
Railway Signaling & Communications Car Builders' Cyclopedia Locomotive Cyclopedia
Railway Engineering & Maintenance Cyclopedia American Builder
Marine Engineering & Shipping Review Marine Catalog & Buyers' Directory
Books covering transportation and building

Railway Age is a member of Associated Business Publications (A. B. P.) and Audit Bureau of Circulation (A. B. C.) and is indexed by the Industrial Arts Index and by the Engineering Index Service. Printed in U. S. A.



"UNION" SRD-5 SELF-RESTORING

DRAGGING EQUIPMENT DETECTOR

With "Union" Self-Restoring Dragging Equipment Detectors on guard at approaches to interlockings, tunnels, etc., you receive continuous, automatic protection at such locations without the need for replacing the detecting elements after each operation.

When the detector plates are deflected in *either* direction by dragging equipment, the circuit controller sets the wayside signal ahead to warn the engineman. And since it restores itself automatically and immediately after each operation, the "Union" Self-Restoring Dragging Equipment Detector is always ready to police following trains.

The restoring mechanism of the SRD-5 is located inside the operating shaft and all parts . . . except for the easily removable detector plates . . . are beneath the tops of the ties. Moreover, it is only necessary to remove the outside plates to permit use of the usual ballast cleaning machines. Consequently, interference to such equipment is minimized.

Ask our nearest district office for full particulars.

UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE CO.

SWISSVALE, PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

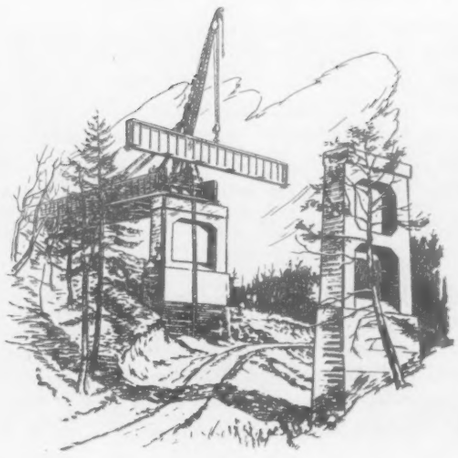
Operating revenues, seven months	
1951	$ 5,852,688,158
1950	4,995,868,031
Operating expenses, seven months	
1951	$ 4,659,130,003
1950	3,933,258,106
Taxes, seven months	
1951	$ 643,599,245
1950	527,361,340
Net railway operating income, seven months	
1951	$ 430,439,242
1950	431,815,948
Net income, estimated, seven months	
1951	$ 272,000,000
1950	273,000,000
Average price railroad stocks	
September 25, 1951	56.48
September 26, 1950	47.43
Car loadings, revenue freight	
37 weeks, 1951	28,613,365
37 weeks, 1950	26,748,144
Average daily freight car surplus	
Week ended September 22, 1951	3,198
Week ended September 23, 1950	3,767
Average daily freight car shortages	
Week ended September 22, 1951	14,504
Week ended September 23, 1950	33,248
Freight cars delivered	
August 1951	7,183
August 1950	5,203
Freight cars on order	
September 1, 1951	139,104
September 1, 1950	86,156
Freight cars held for repairs	
September 1, 1951	96,020
September 1, 1950	113,654
Average number railroad employees	
Mid-August 1951	1,295,941
Mid-August 1950	1,270,215
Net Ton-Miles per Serviceable Car per Day	
July 1951 (preliminary)	955
July 1950	969

In This Issue . . .

LITTLE RAILROADS—BIG JOB: The tremendous, and often under-appreciated, job of transportation being done, in the aggregate, by the country's still numerous Class II and III short lines, and by its switching and terminal companies, is described in this issue's opening feature article—page 92. How they do it, and how their own Short Line Association helps them do it, are both covered therein.

IN THE SPOTLIGHT: September equipment order reports cover 107 diesel units, 2,425 freight cars.— I. C., Frisco, to spend more than $500,000 on enlarging joint yard at Birmingham.—Erie, Western Union, celebrate centennial of first train order sent by telegraph.—C. P. orders equipment costing over $50 million, including 50 diesels, 4,250 freight cars, and 50 head-end passenger cars.—T-M-K Shippers Board recommends that railroads give "immediate attention" to "establishing through routes and rates with reputable common carrier motor lines" for handling l.c.l. freight.—N.Y.C. and P.&L.E. order 261 diesel units, to cost $35 million. —Soo Line directors authorize construction of 600 freight cars next year in road's own shops.—B. & L.E. orders 500 ore cars.

PRETTY GOOD RETURN: How would you like to get an annual return of $92,000 on a net investment of $62,000? That's what the Erie expects to realize from single-tracking 57 miles of its Buffalo-River Junction line. The economics and physical features of the project are described in the article starting on page 97.



In Washington . . .

CAR SUPPLY: A sharp step-up in railroad freight-car repair programs during August brought the total number of serviceable freight cars, as of September 20, to 34,000 more than on the same date last year, despite disappointingly low, flood- and strike-caused, August deliveries of new cars. Those facts were brought out by C.S.D. Chairman Gass in his latest monthly report, in which he indicates that car shortages, while presently less severe than in 1950, will probably continue at least through the usual fall seasonal loading peak, but in which he also finds considerable ground for optimism as to the general car supply situation. Defense Transport Administrator Knudson, however, apparently less optimistic, has predicted continued shortages until serviceable ownership is increased by 300,000 cars. D.T.A., he added, is still aiming for 10,000 new cars a month, but he thinks prospects of attaining that goal are "not bright." The views of both men are summarized in the news.

WEEK AT A GLANCE

CHARLES S. BAXTER, above, is chairman of the railroads' new Tariff Research Group. This group, as reported in Railway Age's *last monthly Freight Traffic Issue (September 3, pages 37, 42 and 74) has been established to do a full-time job of studying ways and means of simplifying and otherwise improving freight tariffs—a job in which Mr. Baxter's committee is expected to have the full cooperation of the Interstate Commerce Commission and of such important shipper organizations as the National Industrial Traffic League. Mr. Baxter himself is a former assistant director of the I.C.C.'s Bureau of Traffic, and has more recently been on the staff of the Defense Transport Administration.*

. . . And Elsewhere

COULD THIS BE THE ANSWER?: Several southwestern railroads are reported to be seriously considering instituting a service similar to the Missouri Pacific's "Speedbox" l.c.l. service. One large l.c.l. shipper in St. Louis, who has made extensive use of the M.P.'s "Speedboxes," reports that over 90 per cent of his accounts which are requesting shipment via "Speedbox" formerly used truck. Truck operators are quoted as being quite concerned over the inroads being made by the "Speedboxes."

WHICH IS THE REAL COMMON CARRIER? Increased shipper concern over railroad l.c.l. services appears to have some root in the growing disinterest among large truck operators in small-lot, less-than-truckload shipments. There is disagreement in the trucking industry as to whether or not this movement away from l.c.l. business—where the trucking business first started—in favor of strictly truckload business is healthy. Although this growing trend in the trucking business is causing many shippers concern, there is little evidence that they are diverting their business away from trucks in order to keep railroad l.c.l. service alive.

HARDEST HIT?: Of all the main lines wrecked by the recent Missouri-Kansas floods, the Gulf, Mobile & Ohio's St. Louis-Kansas City route seems to have had the worst time of it. Two half-mile stretches of track along the Missouri river near Harmony were out of service from July 10 until September 16, necessitating lengthy detours for all trains during that time. The G.M.&O. estimates that repairs to the damaged sections alone total $500,000. We wonder what the paralleling truck lines contributed toward repairing flood-damaged highways and highway bridges in that area.

PROTECT GONDOLAS! In a letter sent to all members of the Mid-West Shippers Advisory Board, General Chairman T. C. Burwell, vice-president of the A. E. Staley Manufacturing Company, Decatur, Ill., has warned that too many gondola cars are wasting time on rip tracks because of damage inflicted by hasty crane and clam shell operators. "Considerable gondola equipment is being loaded by mechanical cranes and unloaded by clam shells, both of which are causing damage to the cars," he said. "In view of the urgent need for this class of equipment, please use every precaution to minimize damage so cars can remain in serviceable condition."

A RAIL JOINT THAT IS NOT A JOINT: A prominent railway supply company reports encouraging results in a project to develop a special bolted joint designed to keep rail ends tightly together regardless of temperature changes. It is reasoned that such a joint, eliminating expansion gaps at the rail ends and obviating movement of adjoining rails relative to each other, would give the same effect as continuous rail. Thus, such expensive ills as "pumping" joints and rail-end batter would be avoided. Watch for an official announcement of the new joint next year.

MANY AN OLD TIMER IS A GOOD PRODUCER: The Lamson & Sessions Co. honored 29 such veterans at a company dinner at Cleveland on Saturday, September 15. The senior employee was George Dennerle, who has worked for Lamson & Sessions for 70 years. More power to such a man and such a company—it's assurance to all of us that there's still a great deal of stability left in this old world of ours.

New Freight Route saves 65 MILES

Interchange with
A T & S F
C G W
C M ST. P & P
C R I & P
K C S
M K & T
MO PAC
ST. L-S F
UN PAC
WABASH
K C T Ry.

Kansas City

SHORTER • BETTER • FASTER

St. Louis and East St. Louis

Interchange with
B & O
C & E I
C R I & P
G M & O
I C
ILL TERM
L & M
L & N
M K & T
MO PAC
N Y C
N Y C & ST. L
PENNA
SOUTHERN
ST. L-S F
ST. L S W
WABASH
A and S
T R R A
MFRS. Ry.

BURLINGTON
CONNECTS
KANSAS CITY and ST. LOUIS
GATEWAYS

The new, short route between Kansas City and St. Louis-East St. Louis enables the Burlington to give freight shippers the benefits of:

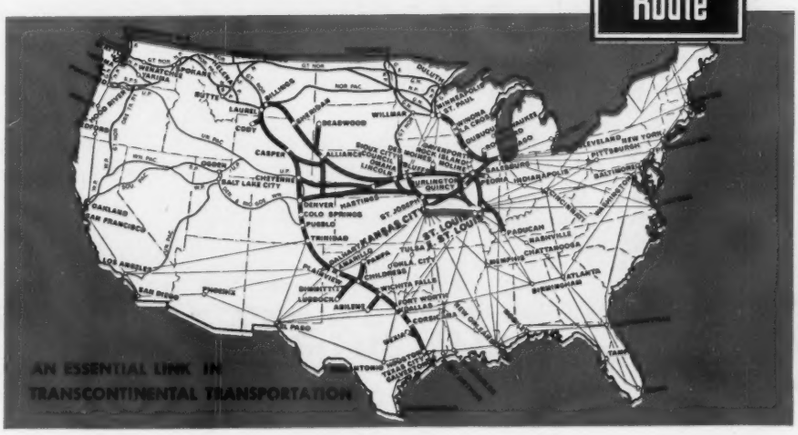
- Faster freight schedules in both directions.
- Overnight as well as morning-to-evening service both ways.
- Early team track placement for overnight or daytime shipments.
- Better connections with other railroads.
- A 65-mile shorter route than before.
- Improved service on transcontinental and St. Louis-Kansas City shipments.

All of these advantages are yours when you specify BURLINGTON... *the Preferred Route*... between St. Louis-East St. Louis and Kansas City.

BURLINGTON LINES—EVERYWHERE WEST

Chicago, Burlington & Quincy Railroad
Colorado and Southern Railway
Fort Worth and Denver City Railway

Burlington Route



"Essential Link"

Bridging the thousand-mile region between the Great Lakes and the Mississippi River on the East and the Rocky Mountains on the West, the Burlington serves all America as "an essential link in transcontinental transportation."

The Burlington's high-speed freight line between St. Louis and Kansas City is a striking example of this railroad's strategic links.

Diesel-powered time freights over this short, direct line provide fast, smooth; dependable service for shippers whose freight moves to, from or through this region.

DAILY SCHEDULES

EASTWARD	Day Train	Night Train
Lv. Kansas City	7:00 am	8:00 pm
Ar. St. Louis	6:00 pm	6:15 am
Ar. E. St. Louis	6:00 pm	6:30 am

WESTWARD	Day Train	Night Train
Lv. E. St. Louis	7:15 am	8:30 pm
Lv. St. Louis	6:00 am	9:00 pm
Ar. Kansas City	6:00 pm	7:30 am

Bendix PRESENTS

The World's Finest Railroad Radio!

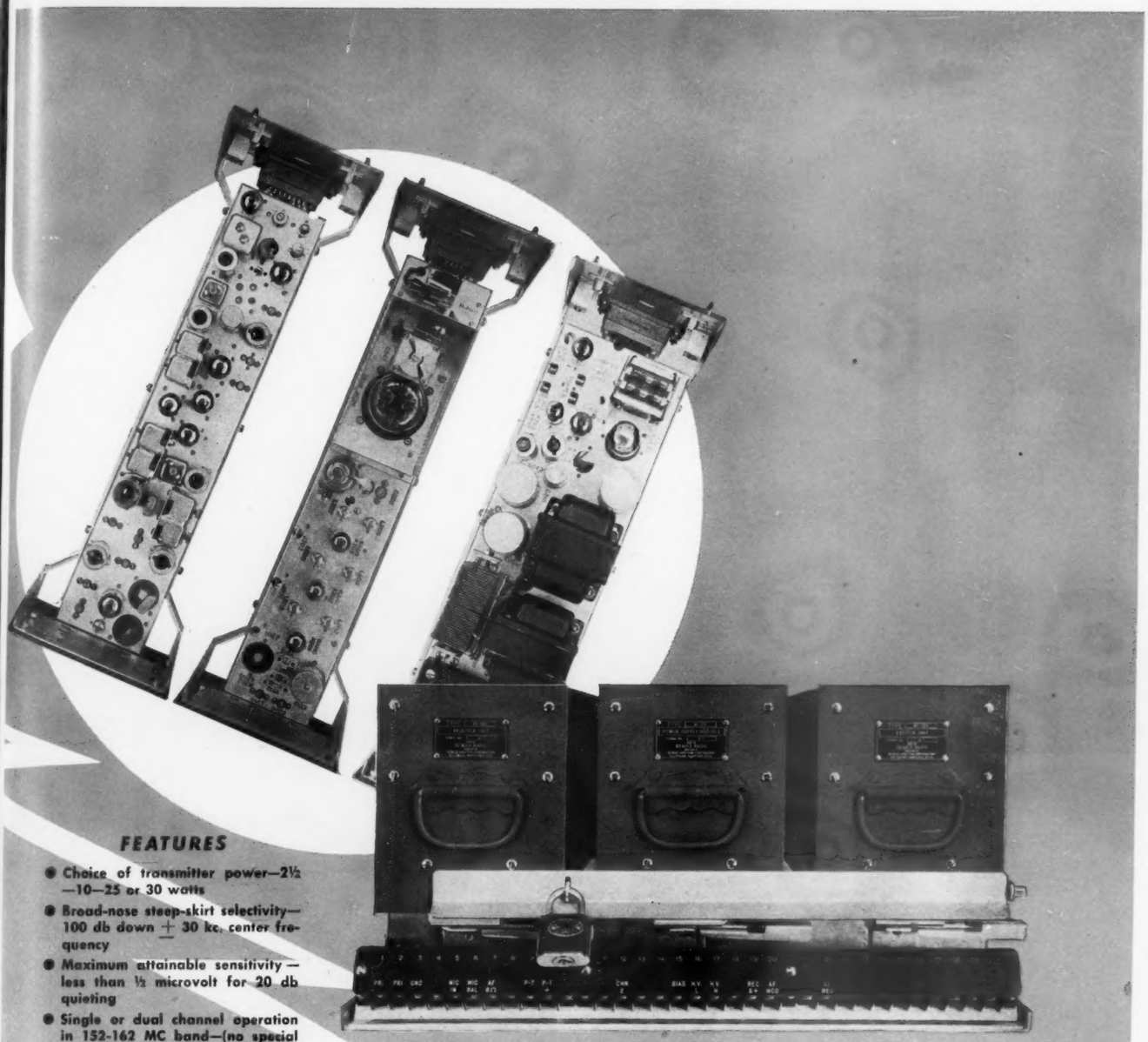
Trafficmaster

Your Choice of One Package or Three Through Bendix *Unitized Construction*

To prove to yourself just how good the new Bendix Radio equipment really is, make a list of the features you would demand in the ideal railroad radio. A quick check will show that the "Trafficmaster" and "Railmaster" include all of these and many more, for Bendix Engineers literally drew their blueprints around the stated requirements of railroad executives and communications superintendents all over America. The full force of Bendix Radio's tremendous electronic experience was turned to producing the finest railroad radio equipment money could build or buy... unitized construction permits packaging of transmitter, receiver and power supply in a single compact case as in the "Trafficmaster" or as individual plug-in units in the "Railmaster." The new Bendix Radio equipment is protected against obsolescence too, for it is easily adapted to the proposed 30 kc. channel. Write Bendix Radio now — our sales engineers will be happy to give you detailed information on the "Railmaster" and "Trafficmaster"—the world's finest railroad radio equipment!

The new Bendix Trafficmaster is directly interchangeable with the Bendix MRT-5

FREIGHT TRAVELS FASTER WITH



FEATURES

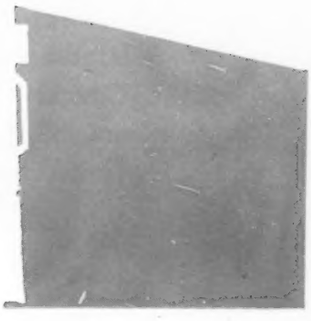
- Choice of transmitter power—2½—10—25 or 30 watts
- Broad-nose steep-skirt selectivity—100 db down ± 30 kc. center frequency
- Maximum attainable sensitivity—less than ½ microvolt for 20 db quieting
- Single or dual channel operation in 152-162 MC band—(no special adapters or modifications needed)
- Operate direct from 6 or 12 volts d.c.; 117 or 230 volts 50-60 c.p.s. a.c.—(inverters available for operation from 32, 64 or 110 volts d.c.)
- Intermodulation characteristic—better than 70 db down
- No adjacent channel vibrator or dynamotor splatter
- Easy accessibility of all parts

PLUS—

Meeting all A.A.R. specifications

Railmaster

Bendix Radio!

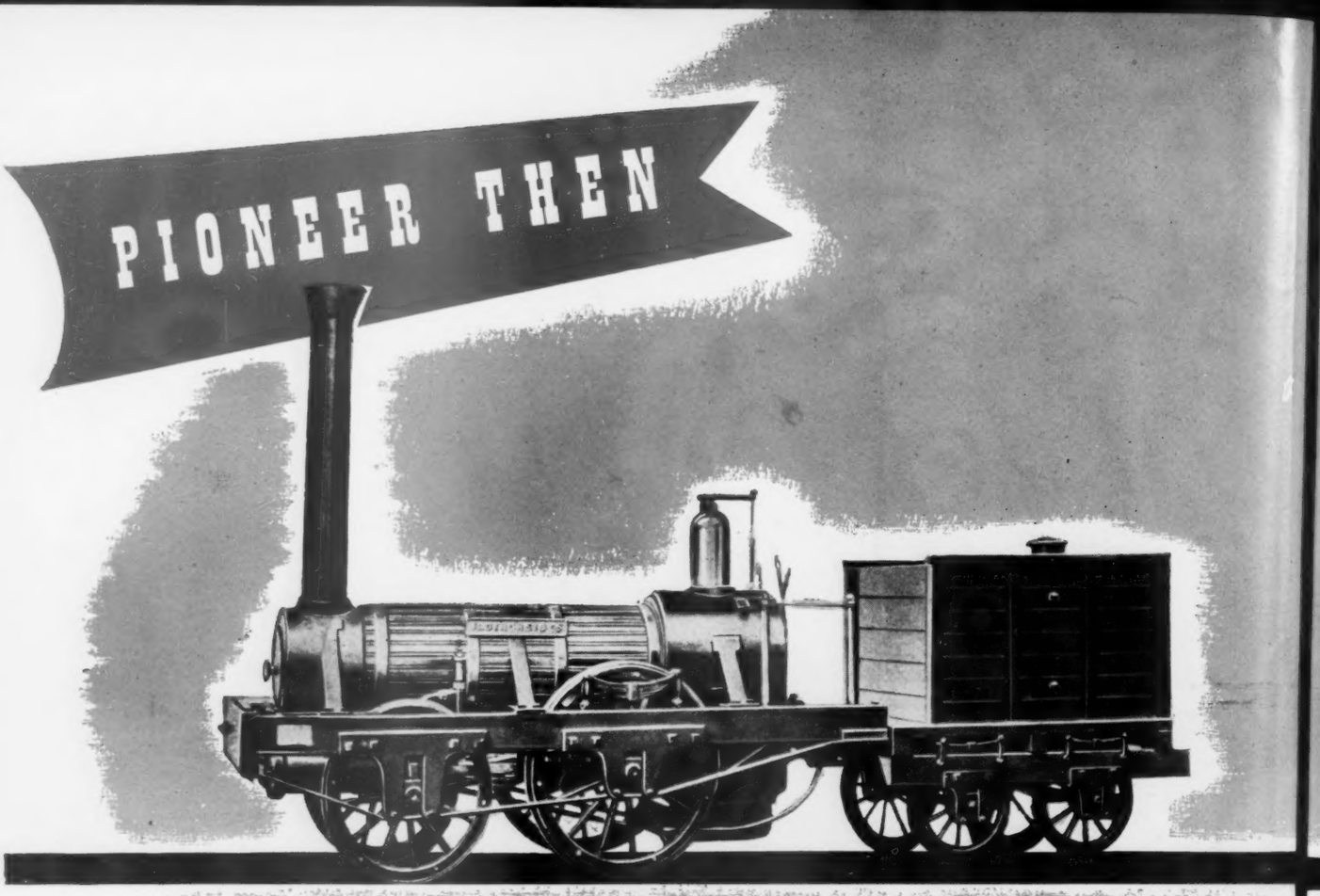


BENDIX RADIO DIVISION of Bendix AVIATION CORPORATION

BALTIMORE 4, MARYLAND

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York

Canadian Distributor: Radio Engineering Products, Ltd., 4305 Iberville Street, Montreal, Quebec



That's the

Did you know the Reading made possible the anthracite industry by building the first railroad from the mines to tidewater, bought Baldwin's first locomotive, built the first iron railroad bridge, the forerunner of all girder construction, also operated the first streamliner in the East. These are but a few of the reasons why the Reading is considered one of the pioneer railroads of the nation.

It is also a leader among modern railroads. For instance: It is the world's largest anthracite carrier and a major carrier of bituminous coal. The Reading Company's Port Richmond on the Delaware River, at Philadelphia, Pa., is one of the most extensive and best equipped tidewater terminals in the United States. The Reading runs through the heart of the East's industrial

Reading!

area, and has the unusually high average of 5.38 industries per mile of system track.

The important fact to shippers everywhere is that the Reading *continues* to be a progressive road. Last year the company spent more than $16 million for Diesels, freight cars, bridges, track and other improvements. This year the progressive program will again add to improving the road's facilities. Reading shippers continue to get greater value for their transportation dollars!

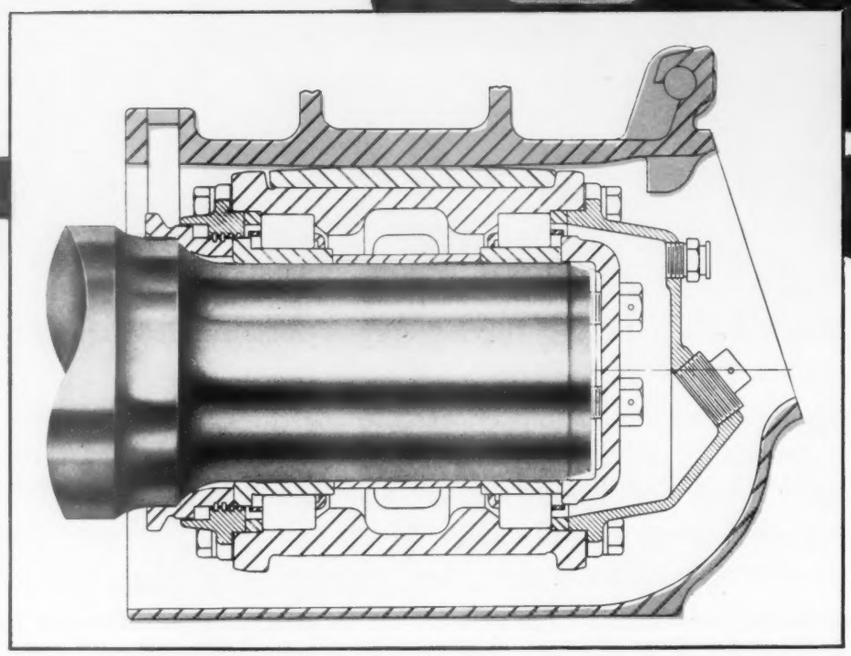
It will pay *you* to know more about the Reading, how our famous friendly service makes it easy and pleasant to do business with us. For information on how the Reading can help you with your shipping, write: H. B. Light, Vice President — Freight Traffic, Reading Terminal, Philadelphia 1, Pa.

Reading Railway System

Reading Lines

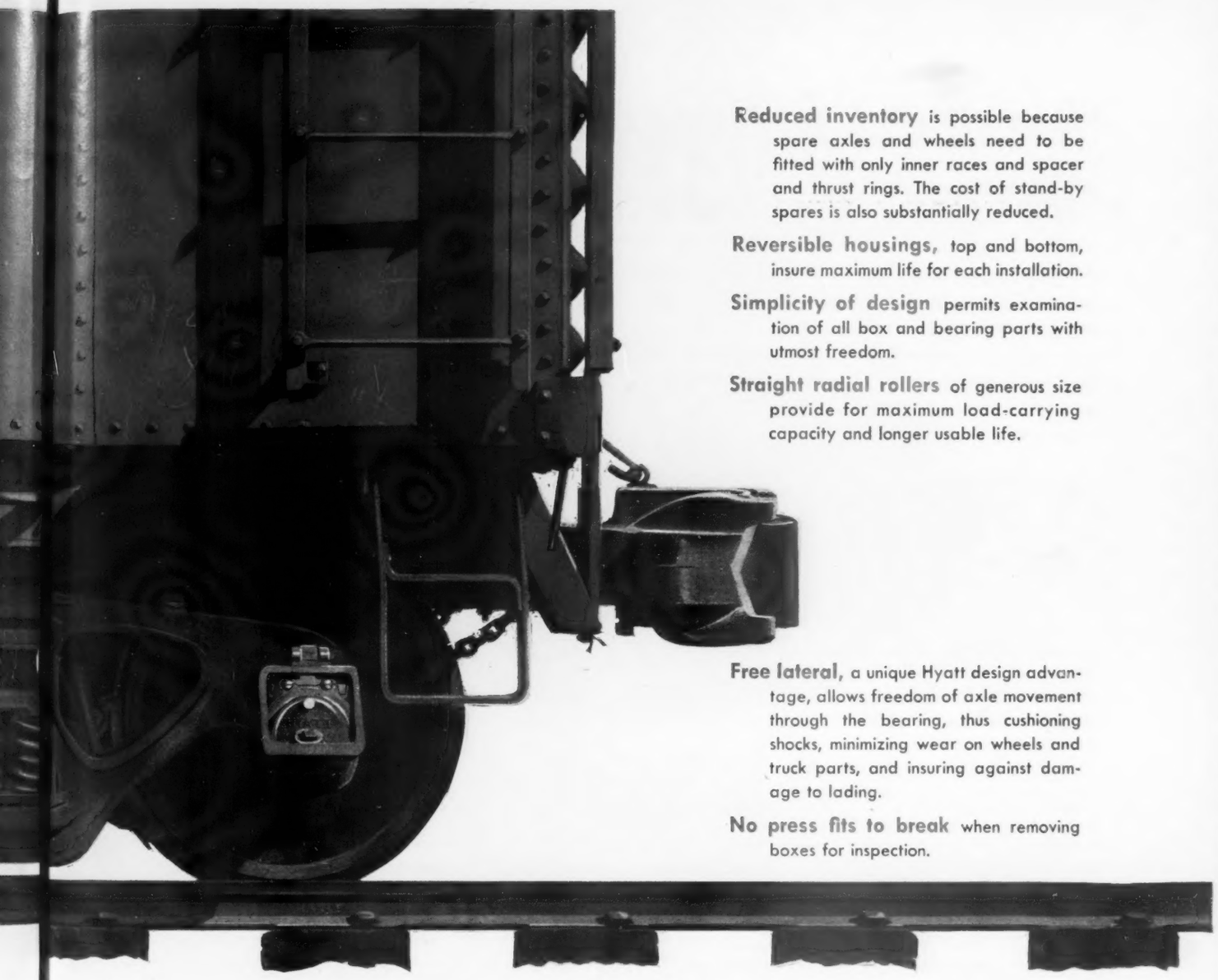
HYATT

Roller Bearing Journal Boxes for Freight Cars



The above box design is for use in side frames having integrally cast journal box housings. Also available, another design for pedestal-type side frames. Hyatt Freight Car Journal Boxes are designed for grease lubrication and will operate for long periods between inspections.

For further details, write to Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey



Reduced inventory is possible because spare axles and wheels need to be fitted with only inner races and spacer and thrust rings. The cost of stand-by spares is also substantially reduced.

Reversible housings, top and bottom, insure maximum life for each installation.

Simplicity of design permits examination of all box and bearing parts with utmost freedom.

Straight radial rollers of generous size provide for maximum load-carrying capacity and longer usable life.

Free lateral, a unique Hyatt design advantage, allows freedom of axle movement through the bearing, thus cushioning shocks, minimizing wear on wheels and truck parts, and insuring against damage to lading.

No press fits to break when removing boxes for inspection.

For the better part of three decades, Hyatt has specialized in furnishing roller bearing journal boxes for passenger cars and diesel locomotives. Freight equipment with an earlier type of Hyatt bearings has been in daily service since 1928. Head-end cars with bearings of very similar design have been in transcontinental service for several years.

• • •

Out of the wealth of such experience, Hyatt now makes available roller bearing journal boxes for freight cars which are equally adaptable to old or new conventional side frames. Only a minimum of alteration is needed, in common with our bearing designs so successfully used under passenger cars and locomotives.

The future of freight transportation by rail is tied in with freedom from hot box delays, delivery of lading in first class condition, and full utilization of rolling stock. As a major contribution to that future, Hyatt is now offering these modern additions to freight car rolling stock equipment.

BOXES *for freight cars*

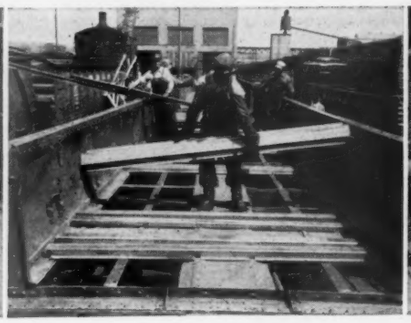
This new car flooring combines 4 advantages

Strong steel sections
Nailable wood planks
Long-range economy
Readily installed

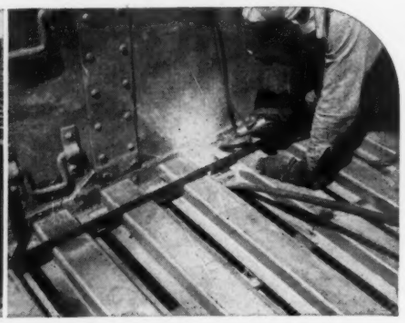
If you are interested in car flooring that combines all these advantages, consider Armco Freight Car Flooring. Not only is this flooring economical over the long pull, but it is readily installed under any conditions found in old or new cars. For example, this composite steel and wood flooring recently replaced worn steel plate floors in 250 old gondolas. The new floors adapt the cars to a wide range of bulk lading.

Here in pictures are various stages in the rebuilding of these cars.

1. Original plate floor between cross-members is cut out with torch to prepare car for rebuilding. Cover plates of center sill and cross bearers are not removed.



2. After riveting-in floor supports and welding levelling shims, the Armco floor sections are moved directly from a freight car by conveyor and roughly positioned.



3. Steel floor sections are spaced accurately with a template that extends half the length of car. Pinch-bar holds flooring section tightly while tack-welding.

4. After finish-welding and spray painting of steel sections, pressure-treated wooden planks are laid between Armco floor sections, properly centered and sealed.

5. Holes are drilled for bolts to anchor wooden planks to car structure. Then ends of steel sections and wooden planks are flashed and sealed with black car cement.

6. This rebuilt gondola car now has increased rigidity to resist twisting and racking of car frame, yet its floor is nailable and suitable for a variety of lading.

Armco Freight Car Flooring is used in boxcars and flatcars as well as gondolas, in new construction or in the replacement of worn-out wood or steel floors in existing cars. For more information on this versatile flooring write us at the address shown below for a copy of the informative booklet, "Armco Freight Car Flooring."

ARMCO STEEL CORPORATION

4611 Curtis Street

Middletown, Ohio

PLANTS AND SALES OFFICES FROM COAST TO COAST
EXPORT: THE ARMCO INTERNATIONAL CORPORATION

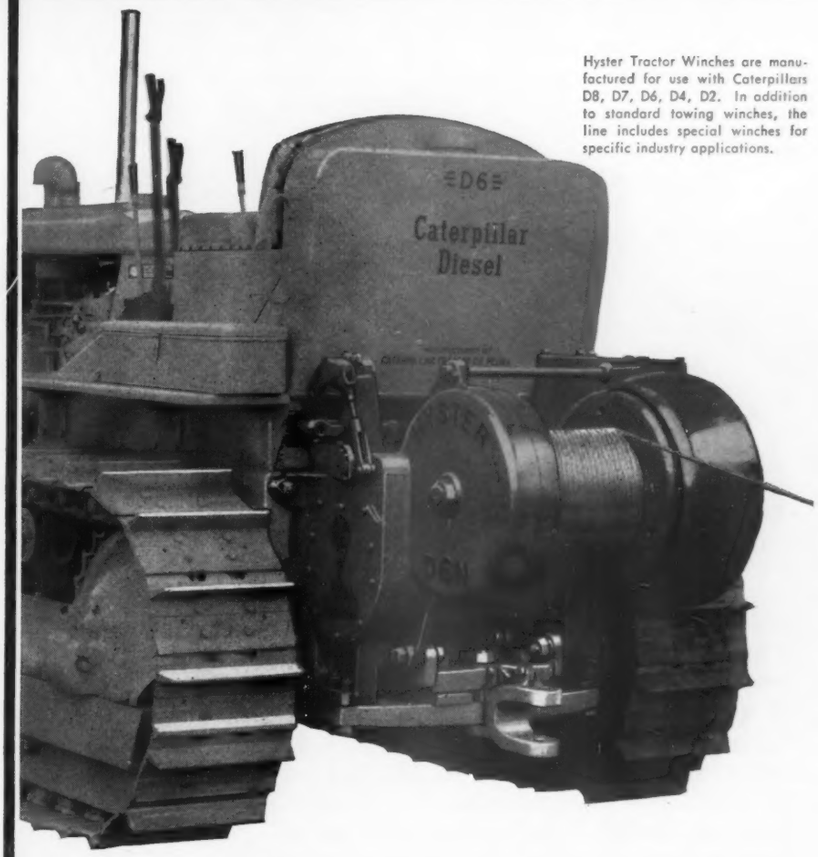
More than 40,000 satisfied owners of

HYSTER® *Tractor Winches*

Hyster Towing Winches increase tractor drawbar pull by as much as 63% when utilizing the maximum line pull of the winch. They are used to —

- ✓ **MOVE** heavy equipment.
- ✓ **RESCUE** heavy trucks or pieces of equipment that are mud-bogged.
- ✓ **PULL** the tractor itself out of mud or other situations that have incapacitated the tractor.
- ✓ **INSURE** against work stoppage or down-time on any project using equipment.
- ✓ **ASSIST** in stump and land clearing operations.
- ✓ **INCREASE** production in logging operations through the use of arch-logging methods.
- ✓ **GROUND SKID** or pan skid logs.
- ✓ **YARD** logs.
- ✓ **PERFORM** innumerable lifting jobs in conjunction with crane attachments.

Hyster's complete line of tractor tools includes winches, yarders, donkeys, cranes, logging arches and sulkies®; Grid Rollers for bituminous road salvage; and Hystaway®, the 5 in 1 tool that includes dragline, clamshell, crane, shovel and backhoe.



Hyster Tractor Winches are manufactured for use with Caterpillars D8, D7, D6, D4, D2. In addition to standard towing winches, the line includes special winches for specific industry applications.

HYSTER

HYSTER COMPANY

2932 N. E. Clackamas, Portland 8, Oregon
1832 North Adams Street, Peoria 1, Illinois

World's Largest Manufacturer of Tractor Winches

Sold and Serviced for more than 20 years by CATERPILLAR-HYSTER dealers all over the world

A high percentage of all Caterpillar Diesel tractors are equipped with Hyster winches.

Caterpillar dealers around the globe—more than 400—sell and service Hyster towing winches for Caterpillar-built tractors.

Hyster towing winches are used in these basic work classifications: CONSTRUCTION, INDUSTRIAL, LOGGING, MINING, OIL and GAS, MILITARY, AGRICULTURE, TRANSPORTATION, GOVERNMENT.

Any Caterpillar dealer will gladly tell you about Hyster tractor winches.

GOULD

Plus-Performance Plan

REGULAR WATER ADDITIONS

ADD MONTHS TO BATTERY SERVICE!

Specialized equipment makes the watering of car lighting batteries on the road, quick and easy.

The amount of water used by a battery indicates its general condition. That's why regular, systematic watering is so important to maximum battery service. The GOULD PLUS-PERFORMANCE PLAN gives you complete technical information, not only on how to establish a regular watering routine, but on practically every problem connected with storage battery use.

Comprising manuals, articles, specifications, bulletins, charts, graphs and forms, the GOULD PLUS-PERFORMANCE PLAN tells you how to select, charge and handle, maintain and determine the condition of your batteries. Use it consistently and you can improve your battery performance as much as 50%! All material is free. A request will bring descriptive booklet by return mail.

WATERING ROUTINE HELPS KEEP CARS IN SERVICE

Regular watering routine on the road is essential for top battery efficiency and maximum service. When adding water, fill to ⅛" below bottom of filling tubes and no higher. Over-filling results in overflow of electrolyte and subsequent rotting of the wood trays. It also lowers the gravity, reduces battery capacity, damages the battery compartment and causes corrosion and grounds.

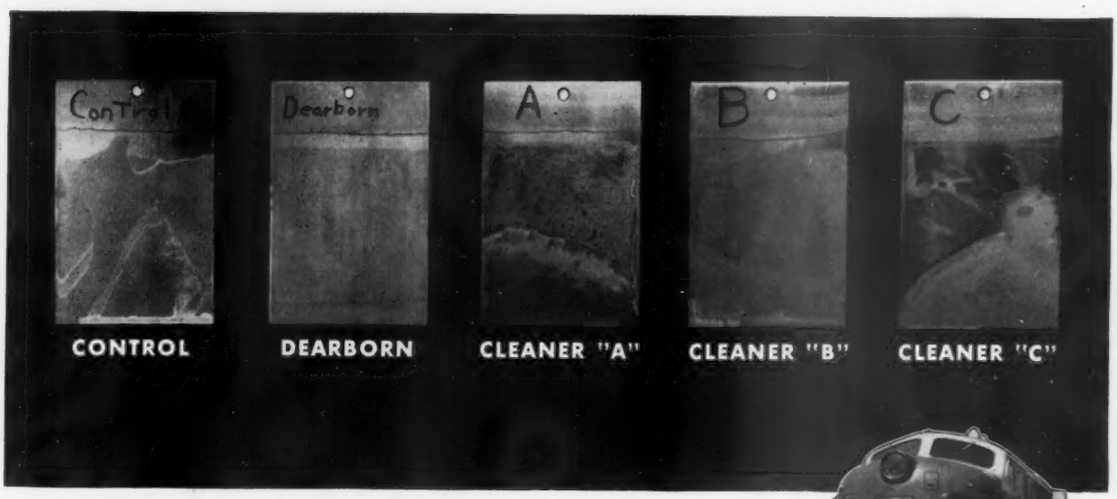
As a general rule, a battery in good condition, using more than ½" of water per month, is receiving too much charge. If it uses less than approximately ¼" per month, it is not receiving sufficient charge. All cells should require the same amount of water. If one cell takes more than others, it should be examined for leakage or internal trouble.

Gould "Z" Plate Batteries—America's Finest Car Lighting and Air Conditioning Batteries

GOULD **STORAGE BATTERIES**

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, NEW JERSEY

Always Use Gould-National Automobile and Truck Batteries



COMPETITIVE TESTS

demonstrate the non-streaking, sheen-producing properties of Dearborn railroad cleaners

These unretouched laboratory test panels conclusively demonstrate the superiority of Dearborn cleaners. A Dearborn Engineer will produce similar results with your equipment . . . and at savings in cleaner cost and man-hours that will be a pleasant surprise.

■ EXTERIOR CLEANERS
Specialized products containing non-streaking and sheen-producing agents formulated to keep painted and lacquered surfaces and polished metal surfaces sparkling new.

■ INTERIOR CLEANERS
Detergent and solvent type materials for interior cleaning of Diesel locomotives, passenger and baggage cars, roundhouses, offices. Designed for safety and economy.

■ ORGANIC SOLVENT TYPE CLEANERS
Compounded for cold cleaning of Diesel parts and filters at terminals lacking heating facilities. Also recommended for cleaning Diesel trucks, Diesel locomotive interiors, traction motor gears, steam locomotive running gear and other parts where excessive oil and grease are present.

■ HOT TANK CLEANERS
For use on steam locomotive side rods, wheels and other parts that become heavily coated with grease and dirt. Also long life materials for cleaning air filters, oil and sintered bronze filters and specialized formulas for non-ferrous metals.

■ ELECTRICAL PARTS CLEANERS
A special solvent of low toxicity for spray cleaning of electrical cabinet interiors, relays, motor windings, other electrical equipment. Removes tarnish and oily film. Will not harm insulation.

■ SCALE REMOVER CLEANERS
For removing scale from Diesel cooling systems with acid pump. While this formula is designed for removing scale from ferrous metals, it may be safely used for cleaning units constructed of copper, bronze, brass or the alloys of these metals.

✓ CORROSION-FREE
Clean with safety. Dearborn cleaners remove surface grime and dirt films without danger of subsequent corrosion.

✓ ECONOMICAL
Lower cleaner cost plus increased coverage per pound results in substantial, traceable savings. Ask for comparative facts.

✓ EASY TO SELECT
The Dearborn line of cleaners has been streamlined to reduce time devoted to ordering, conserve space needed for stocking.

✓ EASY TO USE
Fewer man-hours are needed to clean equipment with Dearborn free-rinsing railroad cleaners.

WRITE. A Dearborn Engineer is ready to discuss your cleaning requirements. Write for complete information on how to "Clean with SAFETY" with the complete, versatile line of Dearborn Railroad Cleaners.

DEARBORN CHEMICAL COMPANY
Merchandise Mart Plaza • Chicago 54, Illinois

Dearborn
TRADE MARK REGISTERED
THE LEADER IN WATER TREATMENT AND RUST PREVENTIVES

Dearborn Chemical Company
Merchandise Mart Plaza, Dept. RA
Chicago 54, Ill.

☐ Send complete information on Dearborn Cleaners

☐ Have a Dearborn Engineer call

Name.....

Railroad.....

Address.....

City..... *State*.....

it pays to ship via

Santa Fe All the Way

Santa Fe

Santa Fe All the Way offers many advantages for freight shippers. Here's how it can be of benefit to you.

1 Santa Fe freight service covers all major markets and gateways to markets in the West and Southwest; Chicago to Texas, Chicago to California, and the territory between.

2 Santa Fe serves its entire vast territory under one unified control; one management, one responsibility.

3 Santa Fe has one of the most modern, progressive plants in railroading.

4 Santa Fe has equipped itself to do not only the "usual" job, but unusual jobs as well.

5 Santa Fe folks will almost "turn themselves inside out" to be of service to shippers. They are service-minded. They have the *will* to do a good job.

A Santa Fe traffic office is as near as your telephone.

Your town doesn't have to be on Santa Fe lines at all to make use of Santa Fe service . . . every town in the U. S. A. is served by a man from the Santa Fe.

In the Santa Fe traffic office nearest you, a Santa Fe representative has your community assigned to him. He knows the rates and routings, the time-saving ways and the special services that will expedite your shipment to and from the West.

This man's job is to go "All the Way" for you when you want to ship something — somewhere — that will put it for any part of its journey on Santa Fe rails.

Write him, 'phone him, wire him — any time you want him. He'll come running.

F. H. Rockwell, *General Freight Traffic Mgr.*
Santa Fe System Lines, Chicago 4, Illinois

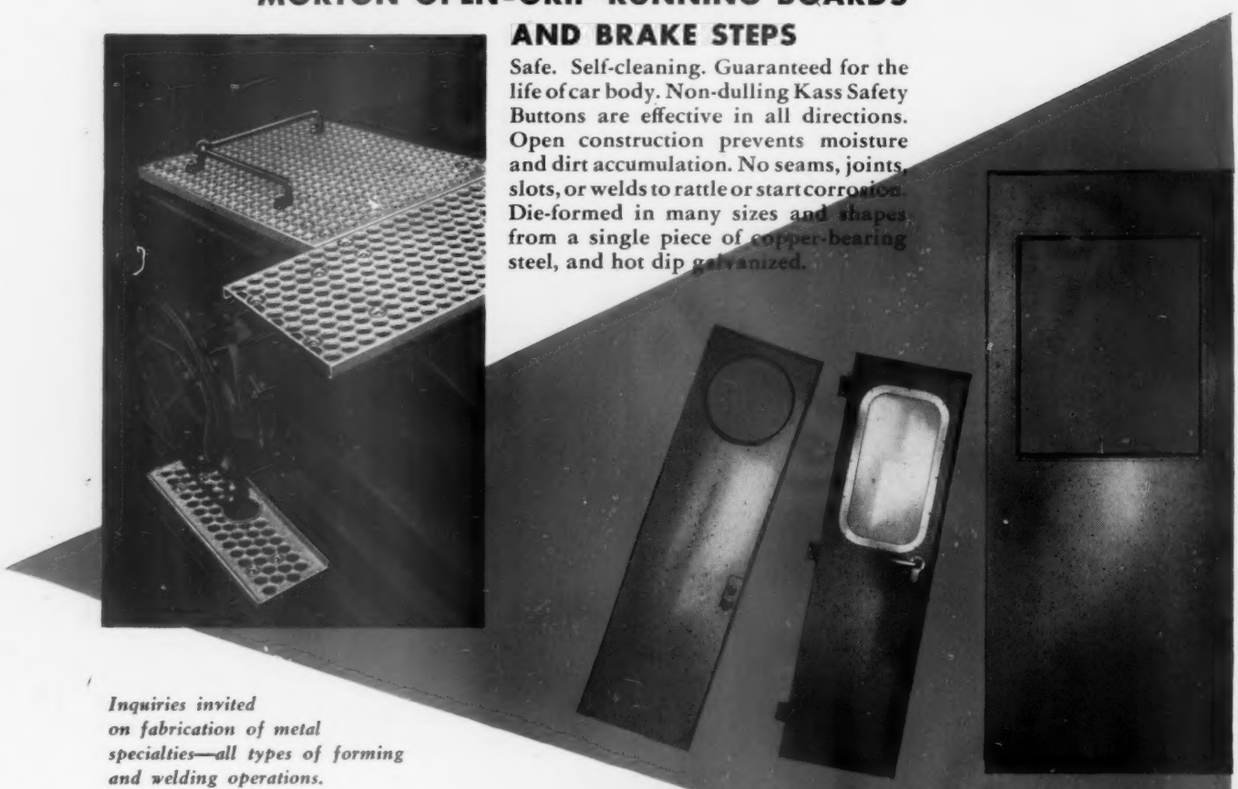
Santa Fe—*all the way*

MORTON

BIG economies are the sum of many small savings, when you specify Morton equipment . . . savings in first cost, savings in maintenance, and the all-over economy of long-lasting quality. Morton railway specialties have been standard on many railroads for almost half a century. Compare the advantages and you'll insist on *Morton*. Write for costs and specification sheets.

MORTON OPEN-GRIP RUNNING BOARDS AND BRAKE STEPS

Safe. Self-cleaning. Guaranteed for the life of car body. Non-dulling Kass Safety Buttons are effective in all directions. Open construction prevents moisture and dirt accumulation. No seams, joints, slots, or welds to rattle or start corrosion. Die-formed in many sizes and shapes from a single piece of copper-bearing steel, and hot dip galvanized.



Inquiries invited on fabrication of metal specialties—all types of forming and welding operations.

MORTON HOLLOW METAL DOORS

Designs and types for every car requirement. Steel, aluminum, or stainless. Standard or built to order. Morton construction provides strength and durability without unnecessary weight, and attractive appearance for modern treatment.

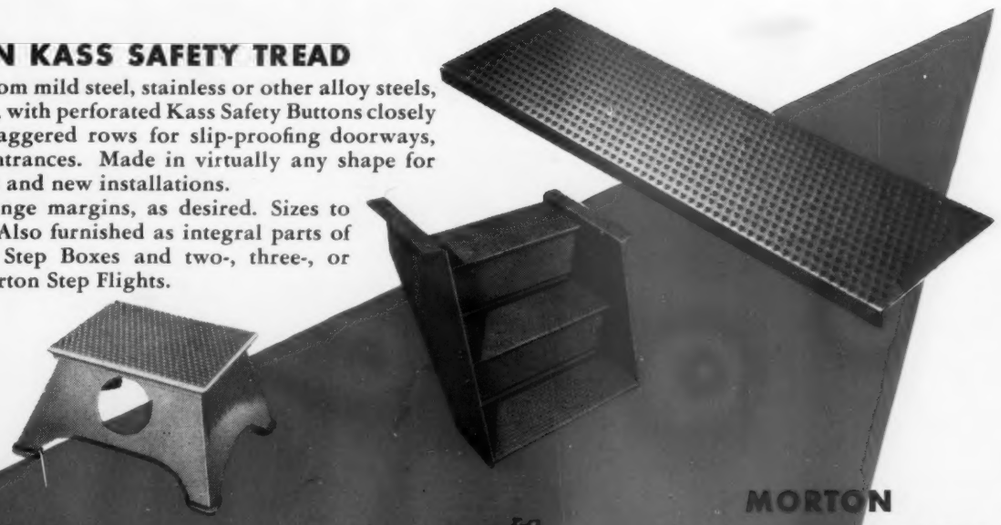
MORTON "CHANARCH" STEEL FLOORING

The ideal support for composition flooring. Narrow dovetail sections serve as anchorage for floor composition. Arches, designed for maximum load-carrying ability, reduce the amount of top surfacing needed. Choice of metals and gauges.

MORTON KASS SAFETY TREAD

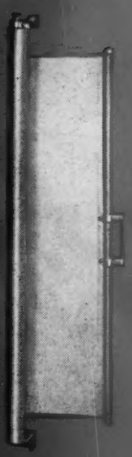
Fabricated from mild steel, stainless or other alloy steels, or aluminum, with perforated Kass Safety Buttons closely spaced in staggered rows for slip-proofing doorways, steps, and entrances. Made in virtually any shape for replacements and new installations.

Smooth flange margins, as desired. Sizes to 36" x 120". Also furnished as integral parts of Kass Safety Step Boxes and two-, three-, or four-step Morton Step Flights.

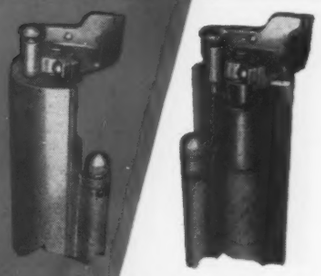


MORTON-ZIP VESTIBULE WEATHER-SEAL

A full-length "zipper"-type closure that seals out dust and moisture; protects passengers when passing from one car to another; assures cleaner interiors. Overlap makes seal tight. Materials conform with other train appointments. New cars or old. No interference when coupling with non-sealed cars. Easily applied.

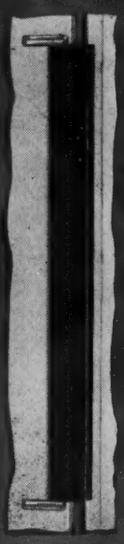


MORTON VESTIBULE CURTAINS



Curtains and parts, handles, hooks, and brackets for all requirements. Morton revolving shield is illustrated (left, closed; right, open). "Safety release" curtain.

MORTON ANTI-PINCH SHIELDS



Simple closures which prevent passengers from catching hands between hinge-edge of closing door and door jamb. Easily attached. Interfere in no way with attractive appearance or efficient door operation.

MORTON VESTIBULE DIAPHRAGMS

Lasting, positive protection from weather, water, cinders. Sloping top drains quickly. Belting is rugged "50-50" weave, treated for fire and moisture resistance. Many features. Also, diaphragm attachments for all requirements.

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MANUFACTURING COMPANY
5125 West Lake Street, Chicago 44, Illinois
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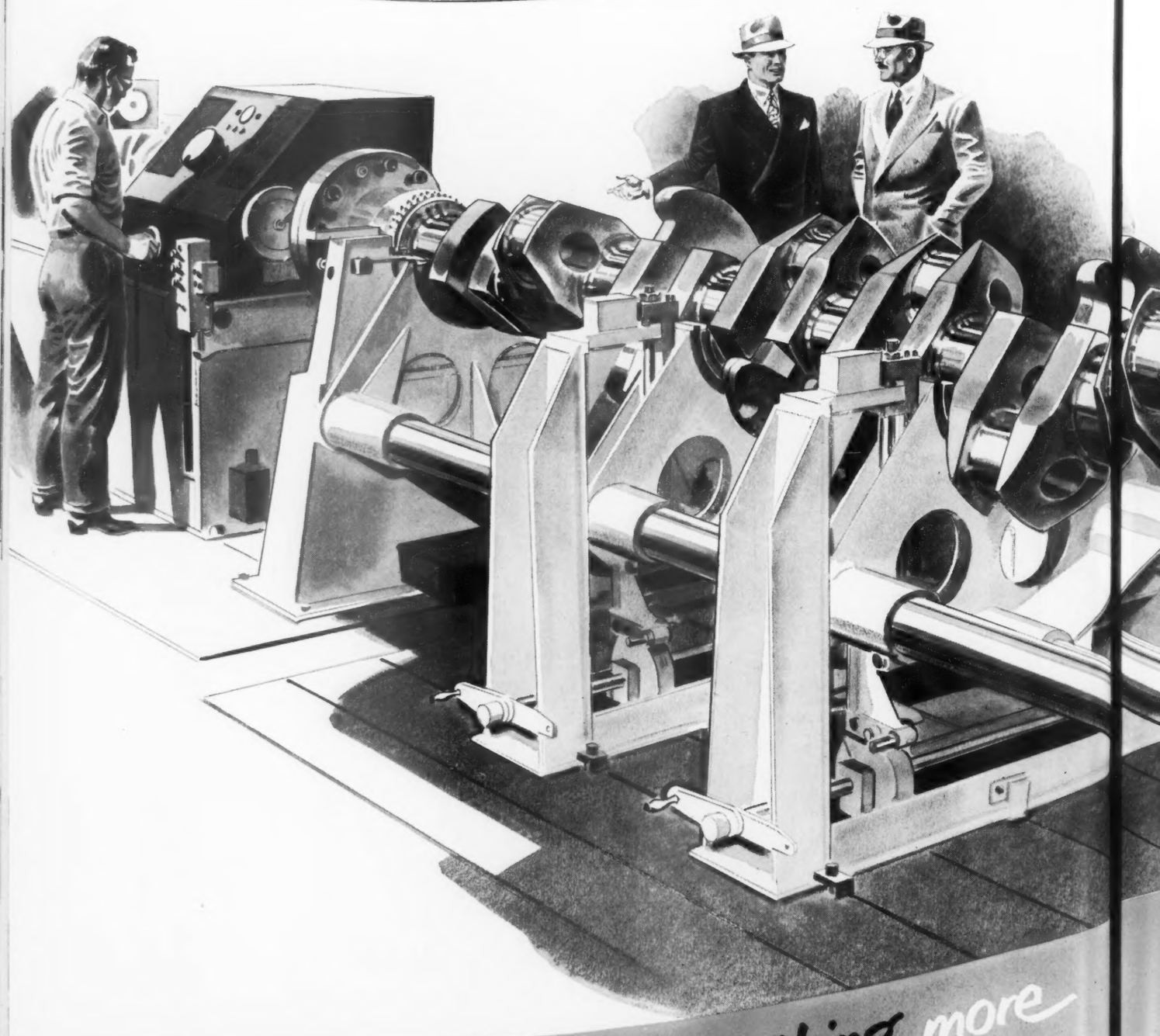
OTHER PRODUCTS: VESTIBULE TAIL GATES, WINDOW CURTAIN FIXTURES, WINDOW CURTAIN ROLLERS, PRESSED STEEL SHAPES, DRAWN STEEL MOLDING, STEEL STAMPINGS

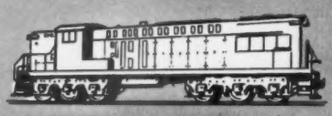
This Crankshaft



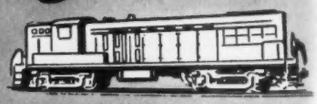
"You're GETTING something more

6400-HP. Road Locomotive
Four 1600-HP. Units

1600-HP. All-service Locomotive
Six Traction Motors

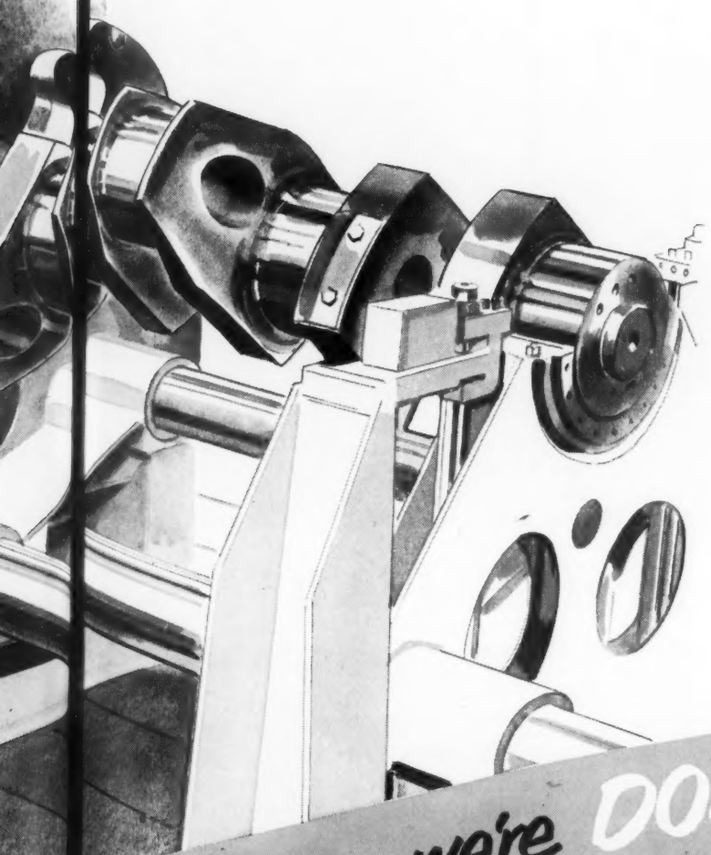


1600-HP. All-service Locomotive
Four Traction Motors



1600-HP.
All-service Locomotive

is turned—to turn out more horsepower



The increased power of Baldwin-Westinghouse Locomotives isn't just a matter of a change in name-plate.

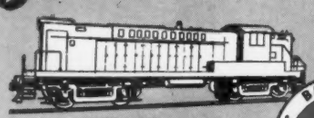
It comes from basic changes in materials—in design—in fabrication, that pour more power to the wheels.

Take the new crankshaft, for instance. You'll find a thicker web . . . larger crank pin and journal bearings for minimum bearing load . . . added overlap between crankpin and journal . . . counter-weighted main center bearing to reduce main bearing loads . . . larger fillets for extra strength. Each shaft is dynamically balanced, to ban vibration.

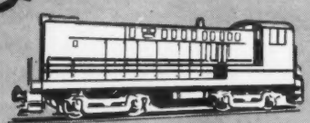
Every engineer can appreciate the importance of these contributions. Every operating man can appreciate the results—in the way of extra performance and extra capacity.

BALDWIN-LIMA-HAMILTON CORPORATION
Philadelphia 42, Pa. · Offices in Principal Cities

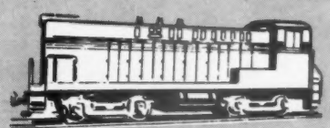
because we're DOING something more"



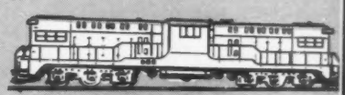
1200-HP.
Road Switching Locomotive



1200-HP.
Switching Locomotive



800-HP.
Switching Locomotive



2400-HP. Road
Transfer Locomotive

BALDWIN-Westinghouse

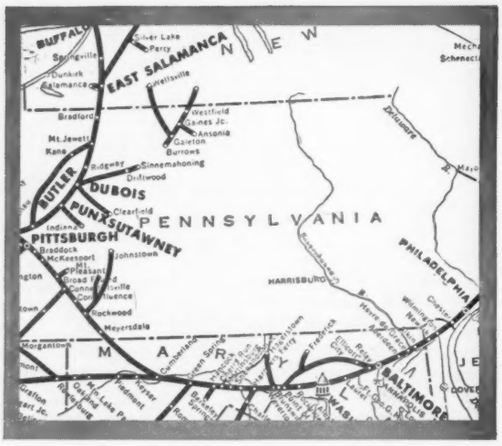
DIESEL-ELECTRIC LOCOMOTIVES

Automatic Electric

Lenkurt

lead in railroad carrier communication

"Our numerous installations of Lenkurt Carrier equipment have proven very satisfactory, and we anticipate utilizing Lenkurt systems as we continue to expand our communication facilities" says A. S. Hunt, General Superintendent, Communications and Signals, of the Baltimore & Ohio.



Three Lenkurt Type 22 circuits are operated in tandem to provide a half-duplex printer circuit between Baltimore, Pittsburgh, Punxsutawney, and East Salamanca. Two physical half-duplex legs are bridged on at Punxsutawney to connect to Butler and DuBois. Printers are operated on a selective "party line" basis.

The progressive B & O uses Lenkurt Carrier telegraph

Through Lenkurt Type 22 carrier telegraph channels, telegraph messages flash from end to end of the B & O system—at speeds of 60 words per minute! Superimposed on existing telephone circuits, either metallic or carrier, Lenkurt Type 22 carrier channels provide all the characteristics needed for high-speed telegraph printing. No wonder the B & O—famed for its modern communication facilities—is constantly increasing its use of Lenkurt Carrier!

Other Lenkurt Carrier systems are providing telephone and telegraph channels on the B & O and on many other progressive railroads. Let us show you how these modern systems can serve *you!*

MANUFACTURED FOR

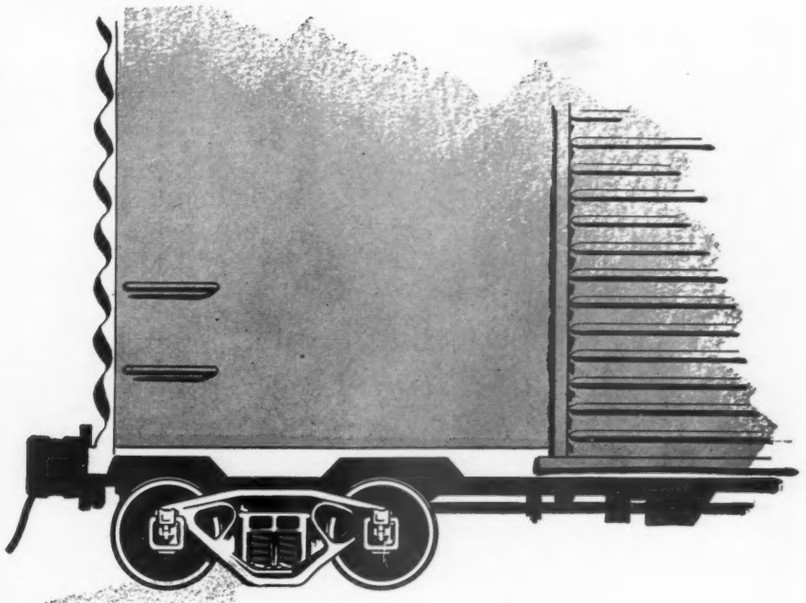
AUTOMATIC ELECTRIC

Makers of Telephone, Signaling and Communication Apparatus...Electrical Engineers, Designers and Consultants

Distributors in U.S. and Possessions:

Automatic Electric Sales Corporation...1033 West Van Buren Street, Chicago 7, U.S.A.

In Canada: Automatic Electric (Canada) Limited...284 King Street West, Toronto, Ontario



Start here...

to get more pay from your pay-load

Long travel springs made by the Railway Steel-Spring Division cushion the pay-load in your freight car and insure a smooth, even ride. This saves you money as it helps reduce costly damage claims to a minimum.

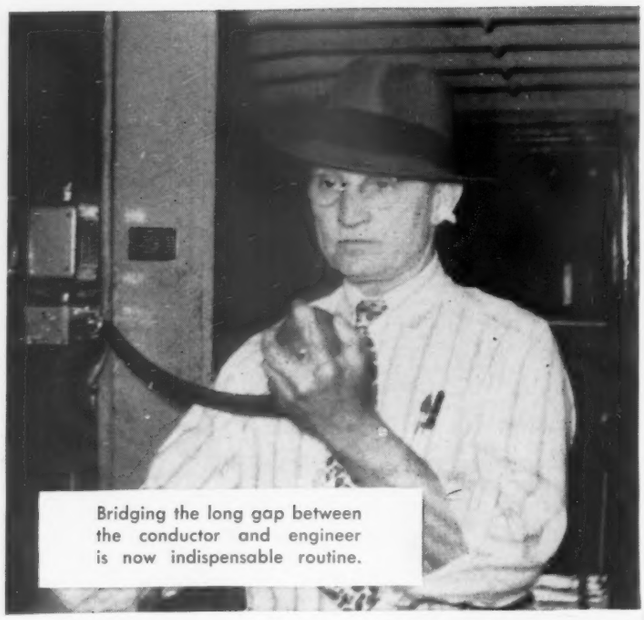
Long travel springs also allow higher speeds that mean faster service and more profits for you from increased freight traffic. Other advantages include lower maintenance costs and longer life for your rolling stock and roadbed.

These features together with Alco's years of experience in spring design and engineering are your assurance of top performance and efficient service.

Always specify *"Railway" springs.* Call your Alco sales representative in New York, Cleveland, Chicago, St. Louis, St. Paul, San Francisco for more information.

Railway Steel-Spring Division

AMERICAN LOCOMOTIVE COMPANY



Bridging the long gap between the conductor and engineer is now indispensable routine.

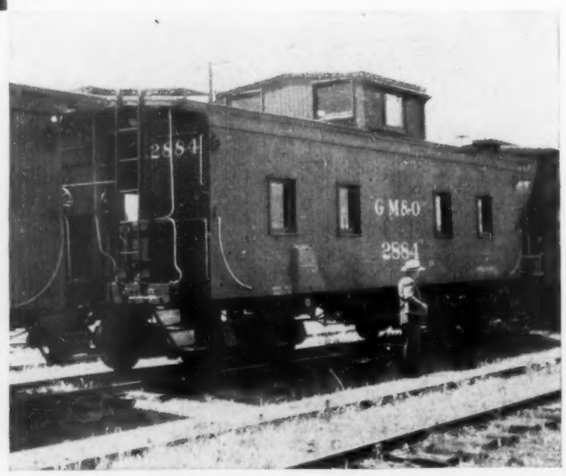
2-WAY RADIO on the GM&O

Through years of hard knocks, cloudbursts, ice storms, mud baths, and tropic heat...you wonder how tough a radio can be until you know how Motorola is put together—with that hard-shell durability in every part....

...*Durability* that tells in part why twice as many Motorolas are in use today as all others *combined*.

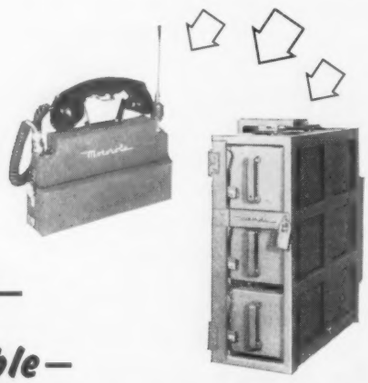
22 years' *experience* in mobile radio—knowing how to build you a better radio today and a surer radio for tomorrow!

SENSICON, for example, a recent and exclusive Motorola achievement gives you *permanent* sealed selectivity, guaranteed for the life of the set—eliminates 15 nuisance adjustments—gives you immunity to channel-change obsolescence.



The GM&O pioneered low-cost caboose power supplies providing dependable radio communication to the head end and intermediate points.

GM&O brakeman using Handie-Talkie® portable radio to direct coupling in any train position, independent of visibility...surer, faster, safer!



Rugged—
Reliable—
Motorola

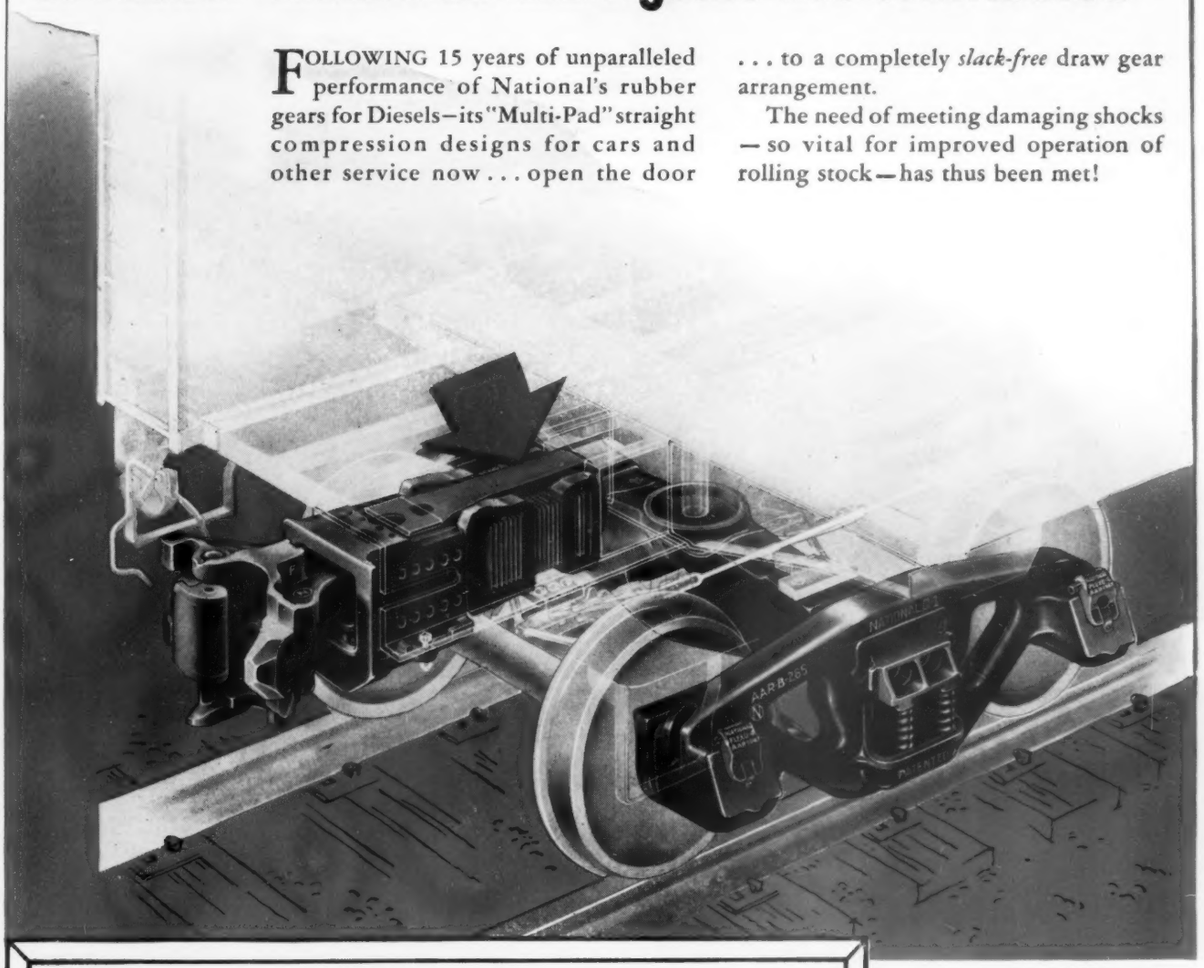
Communications & Electronic Division
4545 Augusta Boulevard, Chicago 51
Rogers Majestic Electronics Ltd., Toronto, Canada

RAILROADS' PROGRESS versus *Impact!*

...and how "NATIONAL'S" continuing development of rubber-cushioned draft gears has contributed—

FOLLOWING 15 years of unparalleled performance of National's rubber gears for Diesels—its "Multi-Pad" straight compression designs for cars and other service now... open the door ... to a completely *slack-free* draw gear arrangement.

The need of meeting damaging shocks — so vital for improved operation of rolling stock—has thus been met!



Type "MF-260" (or-1) for freight service, designed for selective travel, and fitting into standard AAR gear pocket length of 24⅝", is the first to meet and exceed test requirements of recent AAR Tentative Specifications for Rubber Draft Gears for Freight Service.

The individual and unique rubber pads, in combination, can be varied in size and number for desired capacities and sturdiness; with gear compensating design feature available.

These gears are instantaneous in action and effectively reduce even the highest potential end-sill forces.

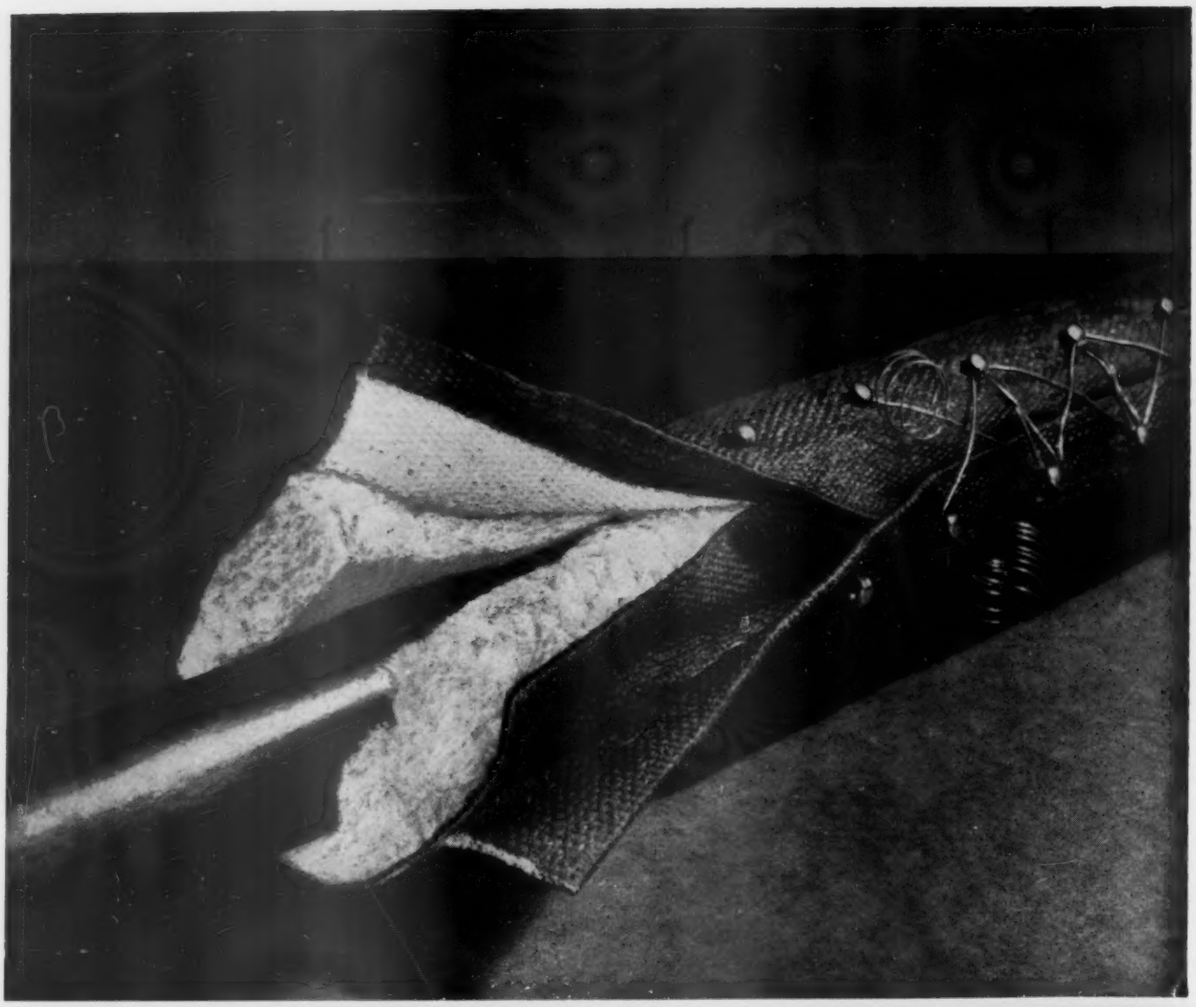
A-4691

NATIONAL Products FOR TRANSPORTATION AND INDUSTRY

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

Cleveland 6, Ohio

COUPLERS • TRUCKS • YOKES • FRICTION AND RUBBER DRAFT GEARS • JOURNAL BOXES AND LIDS



UNARCO WOVENSTONE®

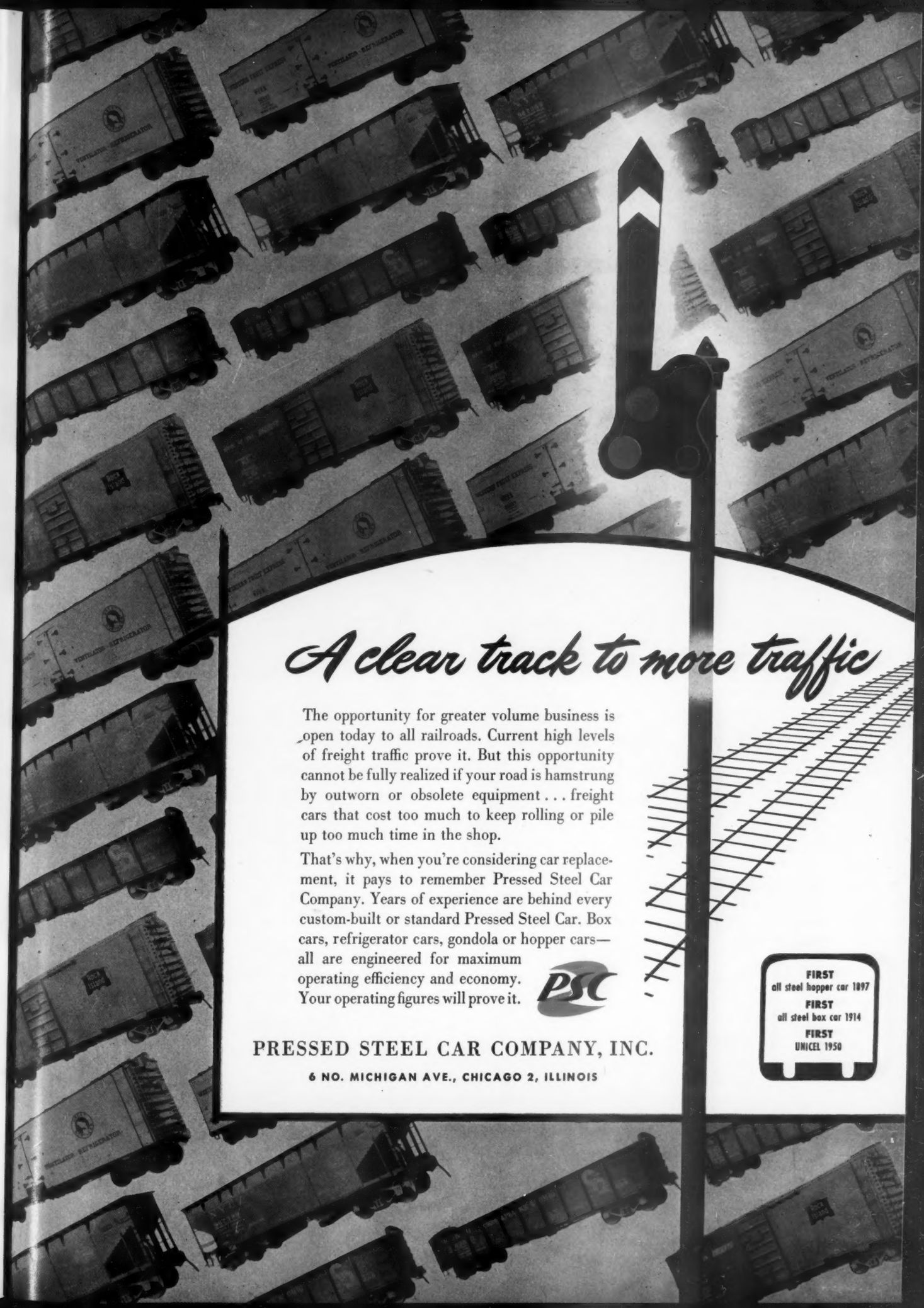
Lace-on Train Pipe Insulation

Contributing to passenger comfort on the nation's trains for more than 25 years—Wovenstone is recognized for its high insulating efficiency, rugged construction and long life. These qualities are reflected in the lower cost of delivering steam heat and hot water to the cars. The longer the train, the greater the need for Wovenstone.

UNARCO

UNION ASBESTOS & RUBBER COMPANY

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS



A clear track to more traffic

The opportunity for greater volume business is open today to all railroads. Current high levels of freight traffic prove it. But this opportunity cannot be fully realized if your road is hamstrung by outworn or obsolete equipment . . . freight cars that cost too much to keep rolling or pile up too much time in the shop.

That's why, when you're considering car replacement, it pays to remember Pressed Steel Car Company. Years of experience are behind every custom-built or standard Pressed Steel Car. Box cars, refrigerator cars, gondola or hopper cars—all are engineered for maximum operating efficiency and economy. Your operating figures will prove it.

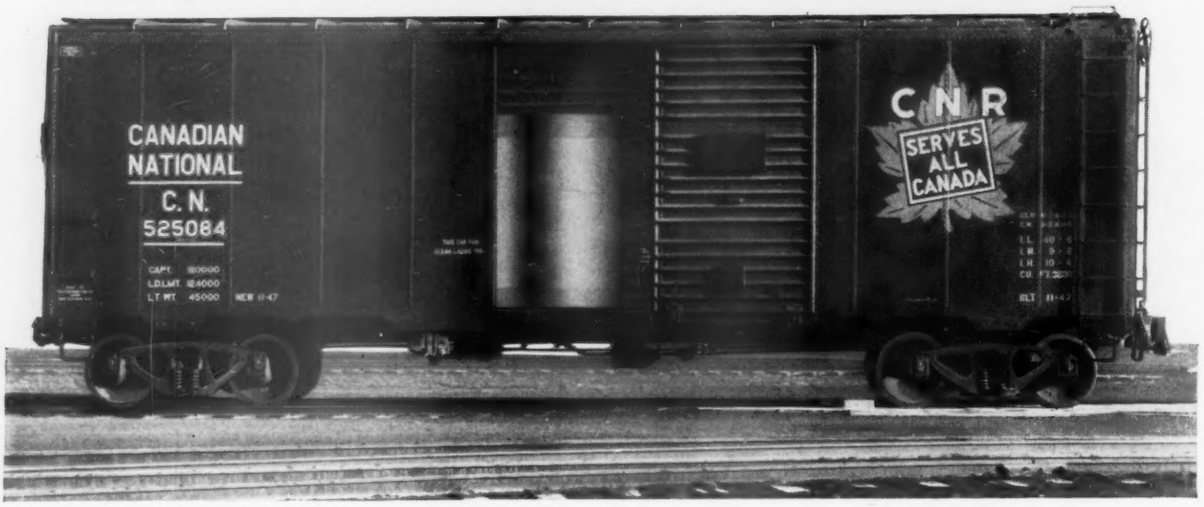
PSC

FIRST
all steel hopper car 1897
FIRST
all steel box car 1914
FIRST
UNICEL 1950

PRESSED STEEL CAR COMPANY, INC.

6 NO. MICHIGAN AVE., CHICAGO 2, ILLINOIS

125,000 cars of newsprint and woodpulp per annum hauled by CANADIAN NATIONAL



Canadian National Railway offices in Boston, Buffalo, Chicago, Cincinnati, Detroit, Flint, Mich., Kansas City, Los Angeles, Milwaukee, Minneapolis, New York, Philadelphia, Pittsburgh, Portland, Me., San Fancisco, Seattle, St. Louis, Washington, D.C. In Canada, 360 McGill St., Montreal, Que.

From mills, Newfoundland to British Columbia, Canadian National hauls 125,000 cars of newsprint and woodpulp per annum. The largest proportion of this tonnage moves to destinations in the United States.

Largest railway system in America with more than 24,000 miles of line, Canadian National serves all ten provinces of Canada and eleven states in the U.S.A. It connects with U.S. railroads at many interchange border points and maintains fast International service between the United States and "Everywhere in Canada".

CANADIAN NATIONAL RAILWAYS
SERVING ALL 10 PROVINCES OF CANADA

CANADIAN NATIONAL RAILWAYS

GRAND TRUNK RAILWAY SYSTEM • CENTRAL VERMONT RAILWAY
DULUTH WINNIPEG AND PACIFIC RAILROAD

Why SOLVAY ships nitrogen fertilizer solutions in tank cars of Alcoa Aluminum

For many years the SOLVAY Process Division of Allied Chemical and Dye Corporation shipped nitrogen fertilizer solutions in ordinary tank cars. However, the corrosive effect of these solutions on iron and steel shortened the life of the cars materially. Tests carried on with aluminum showed that this metal effectively resisted the corrosion by the nitrogen fertilizer solutions. As a result, Solvay Process has become the world's largest user of aluminum tank cars, with over 580 in operation.

Like Solvay, other shippers of various liquid ladings choose aluminum tank cars for one or both of the following reasons:

NO DAMAGE TO LADINGS—Aluminum does not contaminate or discolor sensitive liquids, does not promote decomposition.

NO DAMAGE TO CARS—Many acids and other corrosive ladings have no effect on aluminum. Far less painting and maintenance required.

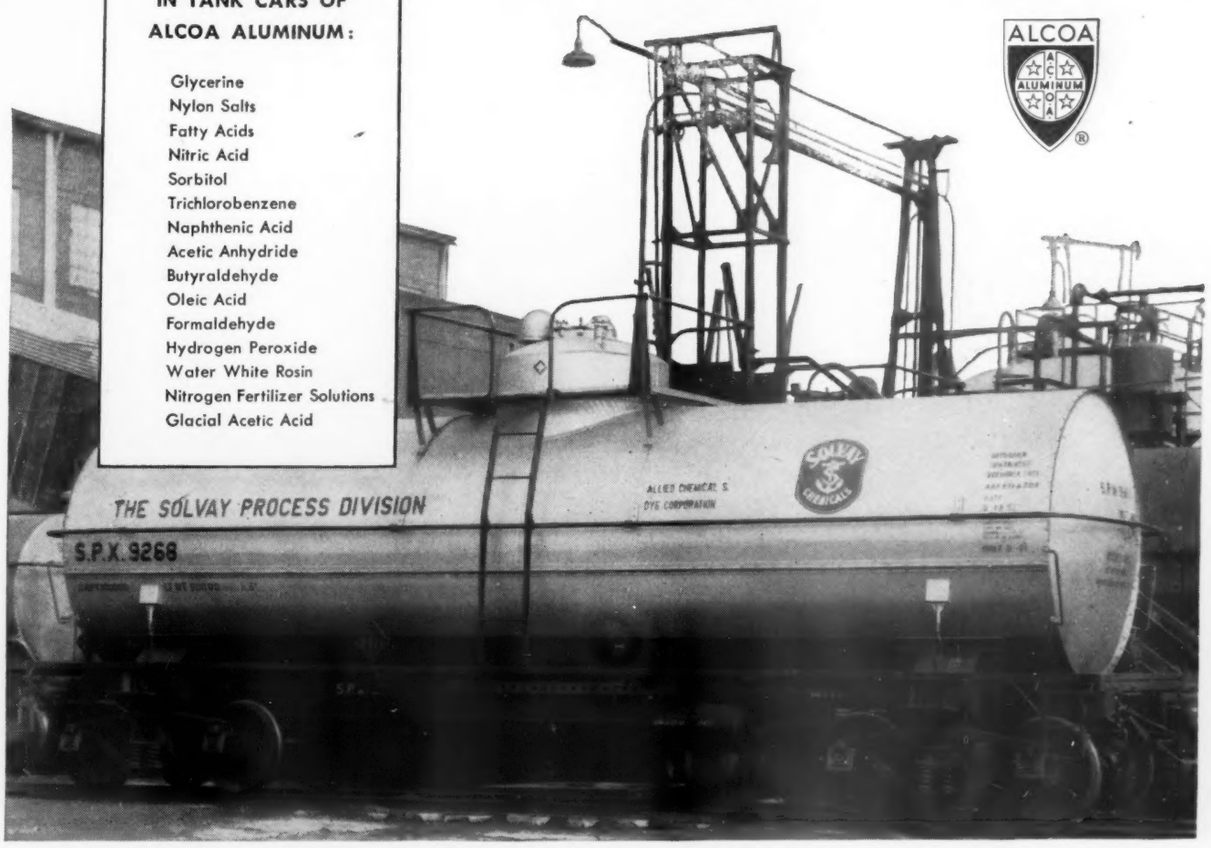
Although military needs for aluminum may delay your purchase or lease of aluminum tank cars, why not get full information now? Alcoa pioneered the aluminum tank car, will make available to you the accumulated knowledge of this development. Contact your car builder. Or write ALUMINUM COMPANY OF AMERICA, 1816K Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA

First in Aluminum

LADINGS LIKE THESE ARE MOVING IN TANK CARS OF ALCOA ALUMINUM:

- Glycerine
- Nylon Salts
- Fatty Acids
- Nitric Acid
- Sorbitol
- Trichlorobenzene
- Naphthenic Acid
- Acetic Anhydride
- Butyraldehyde
- Oleic Acid
- Formaldehyde
- Hydrogen Peroxide
- Water White Rosin
- Nitrogen Fertilizer Solutions
- Glacial Acetic Acid



when the PRESSURE IS ON!

Switching strings of cars in Hump or Flat Classification Yards—

"Slack" running in and out in train operation—

Starting long trains after "taking the slack"—

These are the conditions which "put the pressure" on Draft Gears—and that's where the Capacity, Sturdiness and Endurance of Westinghouse Friction Draft Gears show up best.

WESTINGHOUSE

Friction Draft Gear
Certified A.A.R.

5127

CARDWELL

Friction Bolster Springs
. . . for A. A. R. and
Long-Travel Springs.

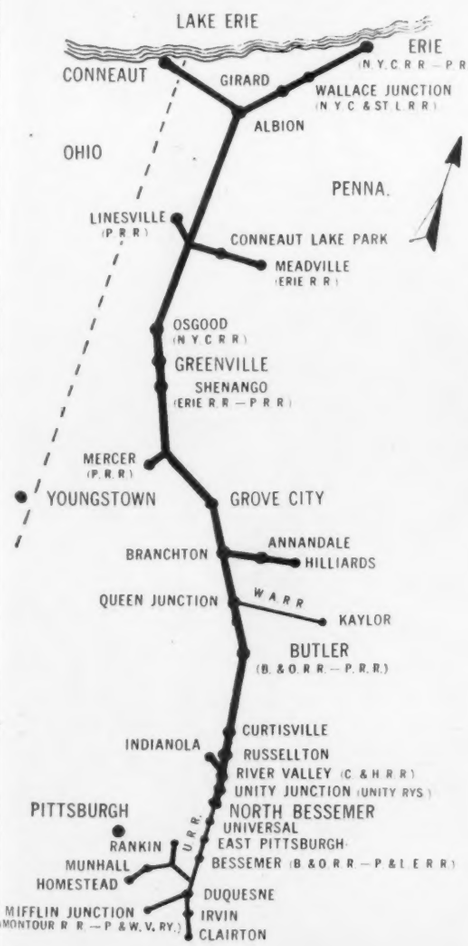
Over 98% of the cars in freight carrying service are A. A. R. construction and over 96% have Friction Draft Gears.

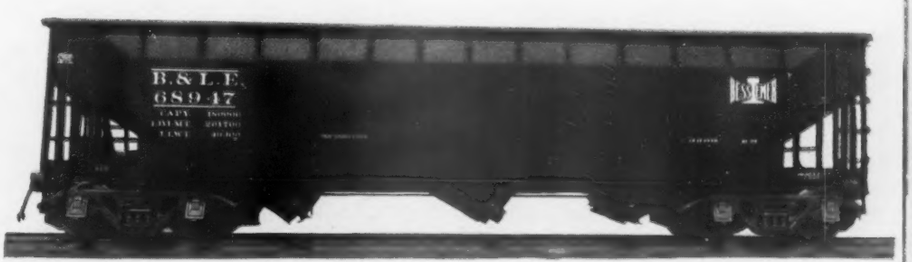
Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

THE BESSEMER ROUTE

AMERICA'S LARGEST

fleet of 90-ton hoppers





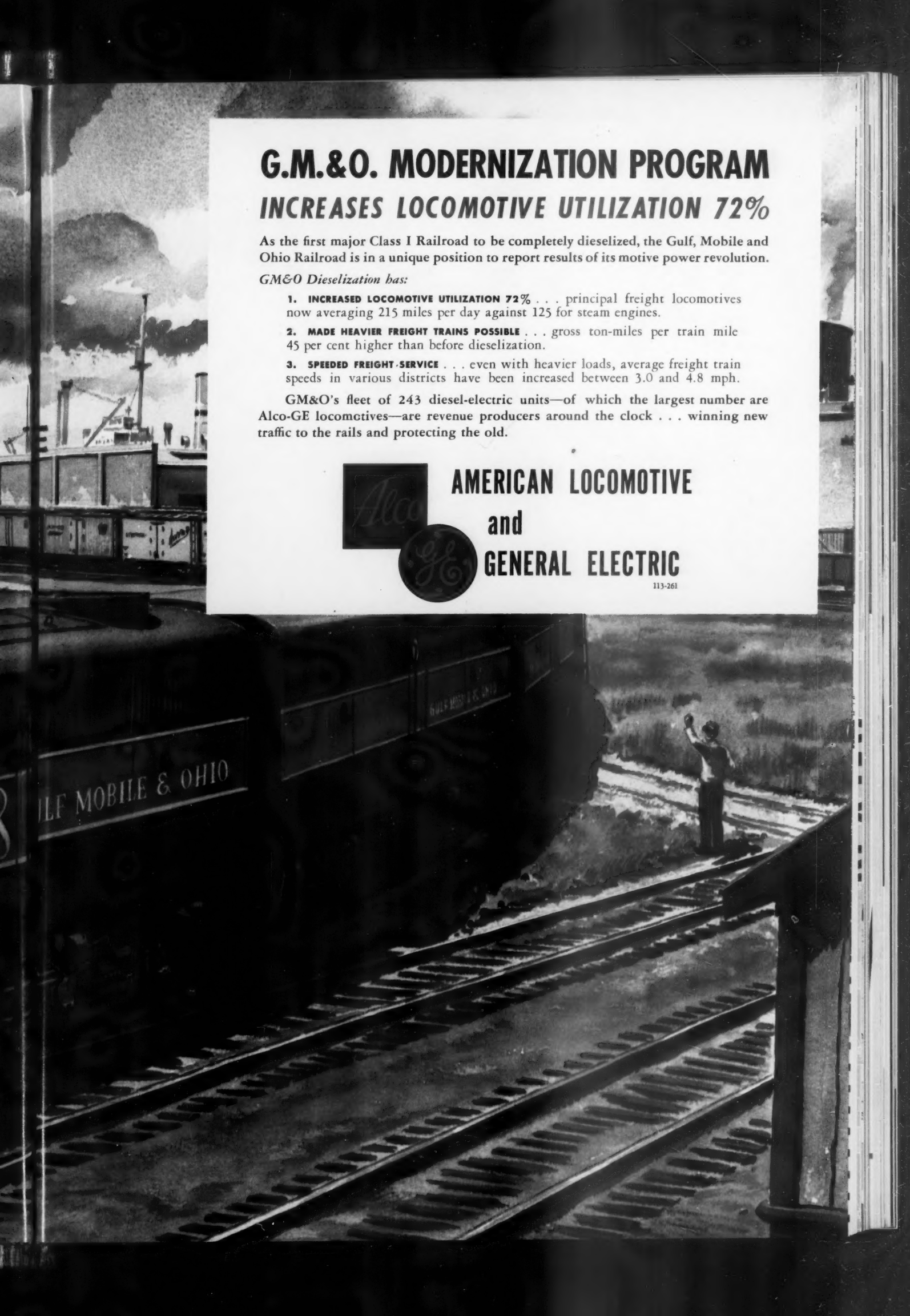
Powered by the most modern locomotives over 155-pound rail

Dependable Car Supply + Excellent Service = Shipper Satisfaction

BESSEMER AND LAKE ERIE RAILROAD COMPANY

PITTSBURGH

738
738
GM&O



G.M.&O. MODERNIZATION PROGRAM

INCREASES LOCOMOTIVE UTILIZATION 72%

As the first major Class I Railroad to be completely dieselized, the Gulf, Mobile and Ohio Railroad is in a unique position to report results of its motive power revolution.

GM&O Dieselization has:

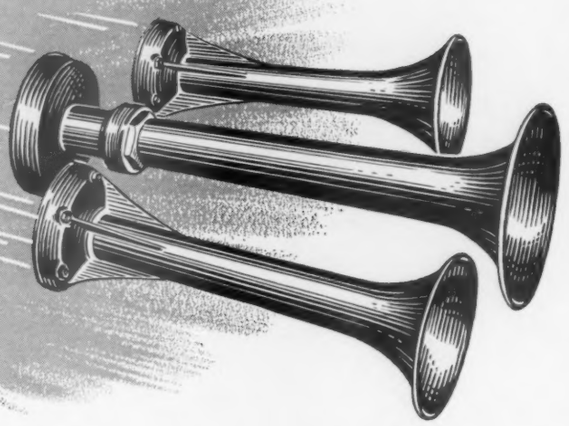
1. **INCREASED LOCOMOTIVE UTILIZATION 72%** . . . principal freight locomotives now averaging 215 miles per day against 125 for steam engines.
2. **MADE HEAVIER FREIGHT TRAINS POSSIBLE** . . . gross ton-miles per train mile 45 per cent higher than before dieselization.
3. **SPEEDED FREIGHT SERVICE** . . . even with heavier loads, average freight train speeds in various districts have been increased between 3.0 and 4.8 mph.

GM&O's fleet of 243 diesel-electric units—of which the largest number are Alco-GE locomotives—are revenue producers around the clock . . . winning new traffic to the rails and protecting the old.

AMERICAN LOCOMOTIVE and GENERAL ELECTRIC

113-261

. . . . the horn grows louder



As our vast dieselization program moves along . . . the horn grows louder.

Two and a half years ago only 27.9% of our total road freight ton-miles were moved under diesel power. Today, 78.2% of the total is diesel powered. In the yards, the addition of new switchers have raised our diesel-powered yard engine hours from 50.9% to 63.6% in the same period.

And to keep pace with this increased use of diesel motive power, new diesel locomotive servicing shops have been constructed in the Chicago and Proviso Yards, and additional oil storage and fueling stations have been installed at other points, at a total cost well over three million dollars.

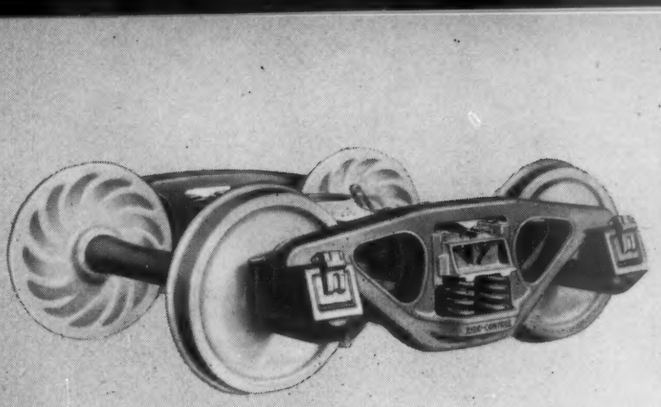
As a result, the shippers we serve today enjoy faster and more efficient freight service at terminals, transfer points and along the entire line of our 9700-mile system.

Your local North Western freight representative is an expert in shipping techniques. Call him for assistance.

CHICAGO AND NORTH WESTERN SYSTEM

CHICAGO and NORTH WESTERN SYSTEM

PIONEER RAILROAD OF CHICAGO AND THE WEST—SINCE 1848



More Users buy more A-S-F Ride-Control Trucks than all other trucks combined... because Ride-Control® is smooth-riding, long-lasting--- cuts operating costs!

American Steel Foundries

Mint Mark of ○ Fine Products

MORE THAN

300,000*

CAR SETS SPECIFIED

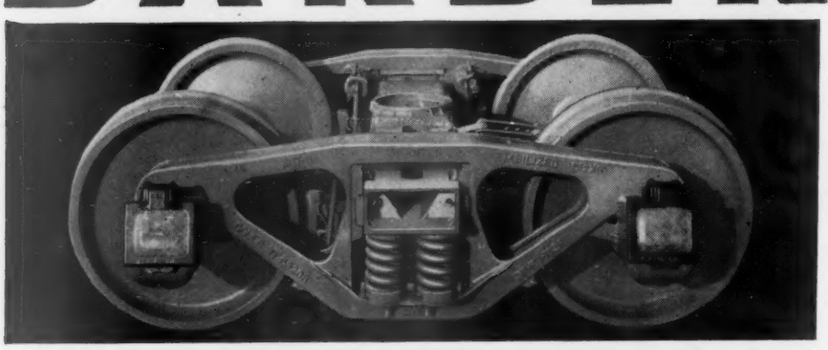
*600,000 Trucks

There is one outstanding reason for the steadily increasing demand for Barber Variable Friction Stabilized Trucks.

It is their demonstrated ability to control spring action satisfactorily — not only in competitive tests, but also in long sustained service tests; not only at certain speeds, but at all speeds; not only under light loads, but from empty to the allowable 10% overloads.

Furthermore, this protective action continues year after year, with no maintenance expense.

BARBER



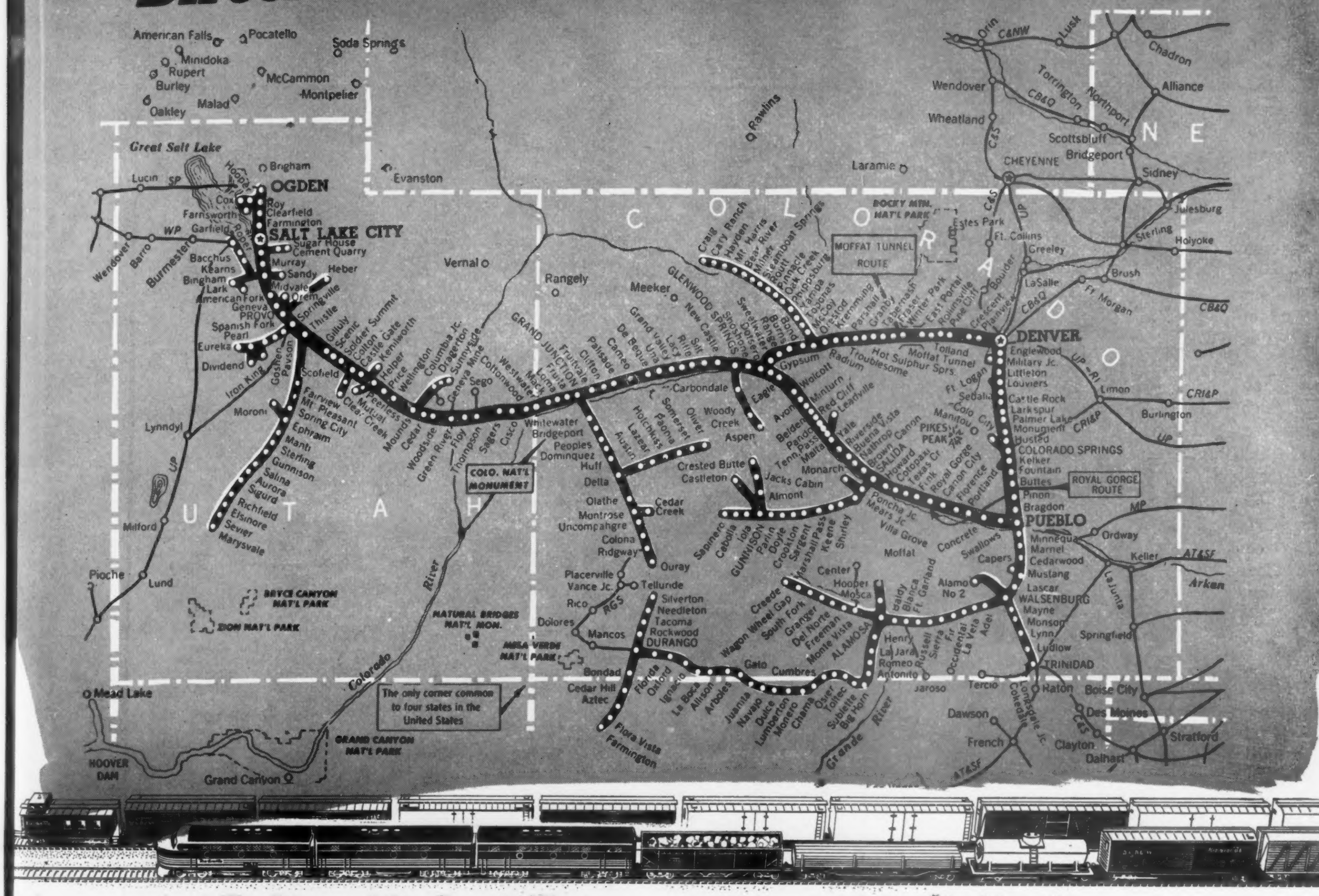
STABILIZED TRUCK

5729

The side springs increase the capacity of the Barber Truck, since they carry their share of the load.

STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVE., CHICAGO, ILL.

Rio Grande..Major Link in the Nation's *Direct* Central Transcontinental Route!



The Denver & Rio Grande Western Railroad's heavy-duty, high-speed steel highways across Colorado and Utah are busy arteries of commerce forming a vital, *direct* bridge between America's east and west.

With gateways at Denver and Pueblo on the east, and at Salt Lake City and Ogden on the west, Rio Grande is your key to rapid, efficient movement of goods cross-country, and the hub of freight distribution throughout the Rocky Mountain states.

This progressive railroad's advantageous geographical location is augmented by dieselized main line freight operation, use of Centralized Traffic Control and Automatic Electric Block Signals, cab-to-caboose and train-to-station radio communication, and the very finest yard facilities — including the most modern railroad icing plant in the west.

Steel or automobiles, lumber or furniture, perishables or canned goods, or whatever your shipment may be—LCL or carload—it goes *direct* when you use Rio Grande's central transcontinental route!

THE DIRECT CENTRAL TRANSCONTINENTAL ROUTE

DENVER AND RIO GRANDE WESTERN RAILROAD

MAIN LINE *Rio Grande* THRU THE ROCKIES

F. C. HOGUE, Vice-President—Traffic
Denver & Rio Grande Western Railroad
Rio Grande Bldg., 1531 Stout Street
Denver, Colorado

Trained
FOR TRAFFIC
Their Job is to Help with Yours!

KANSAS CITY SOUTHERN Lines

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D. S. LAMBETH, General Agent
B. T. HARRISON, Commercial Agent

ATLANTA 3, GA.—922 Healy Bldg.
Tel. Alpine 3343
WM. C. SCHMIDT, General Agent

BATON ROUGE, LA.—Gov't and So. 14th Sts.—Tel. 2-1565
F. H. STRONG, General Agent

BEAUMONT, TEX.—Gilbert and Jefferson Sts.—Tel. 4-3131
F. L. COLVIN, General Agent

BIRMINGHAM 3, ALA.—814 Watts Bldg.
Tel. 7-6624
F. R. LIPSCOMB, General Agent

CHICAGO 3, ILL.—1621 Bankers Bldg.
Tel. Randolph 6-2383
H. J. McCARTHY, District Traffic Mgr.
C. H. HANSON, General Agent
M. C. BENNETT, Commercial Agent

CINCINNATI 2, O.—724 Provident Bank Bldg.—7th and Vine Streets—Tel. Main 0259
PAUL L. SENSBACH, General Agent

CLEVELAND 1, O.—1109 Term. Tower Bldg.—Tel. Main 2498
W. J. SEIBERT, General Agent

DALLAS 1, TEX.—1107 Southland Bldg. Annex—Tel. Riverside 9234
H. R. WHITING, District Freight Agent
G. R. MARYE, General Agent
G. E. CONDRAY, Commercial Agent

DENVER 2, COLO.—4923 W. 31st Ave.
Tel. GLendale 4023
CARL F. WESTCOTT, General Agent

DETROIT 2, MICH.—3-109 Gen. Motors Bldg.—Tel. TRinity 5-8962
T. F. BRENNAN, General Agent

EL PASO, TEX.—519 Electric Bldg.
Tel. 3-6612
R. T. EATMAN, Jr., General Agent

FORT SMITH, ARK.—219 First Nat'l Bank Bldg.—Tel. 4895
E. D. PENCE, General Agent

FORT WORTH 2, TEX.—409-10 W. T. Waggoner Bldg.—Tel. FAnnin 2890
G. A. HENSON, General Agent

GREENVILLE, TEX.—3806 Stonewell St.
Tel. 625
C. R. DYER, General Agent

HOPE, ARK.—Tel. 196
A. B. PATTEN, General Agent

HOUSTON 2, TEX.—702-3 Bankers Mtg. Bldg.—Tel. Preston 4276
H. H. RIDDLE, General Agent
N. G. STRIPLING, Assistant Gen. Agent

JOPLIN, MO.—301 Joplin Nat. Bank Bldg.
Tel. 525
J. S. HUNSAKER, General Agent

KANSAS CITY 6, MO.—K.C.S. Bldg.
Tel. Victor 0077
J. T. GARRIGUES, General Agent
L. A. McDANIEL, Commercial Agent

LAKE CHARLES, LA.—232 Lawrence Street
Tel. 4353
E. E. GREESON, General Agent

LITTLE ROCK, ARK.—312 Gazette Bldg.
Tel. 2-5046
L. R. SQUIRE, General Agent

LOS ANGELES 14, CAL.—602 Cairns Bldg.
Tel. TRinity 6188
H. L. SULLIVAN, Western Dist. Traf. Mgr.
WARD ALLEN, General Agent
L. G. PENCE, Commercial Agent

MEMPHIS 3, TENN.—735 Exchange Bldg.
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F. D. TRACY, General Agent
E. F. GOUDELOCK, Commercial Agent

MINNEAPOLIS 2, MINN.—1060 Rand Tower—Tel. Geneva 3535
H. H. JORDAN, General Agent
F. S. MILLER, Commercial Agent

NEW ORLEANS 12, LA.—702-708 United Fruit Co. Bldg.—Tel. Magnolia 2783-86
W. D. BURCH, Executive General Agent
S. O. GRUBBS, Jr., Asst. Exec. Gen. Agt.
L. J. ROSENTRETER, General Agent
S. F. BROWNE, Commercial Agent

NEW YORK 4, N. Y.—25 Broad Street
Tel. Hanover 2-6960
C. P. HOCH, Eastern District Traffic Mgr.
W. H. McLAUGHLIN, General Agent
R. M. LINCOLN, Commercial Agent

OKLAHOMA CITY 2, OKLA.—511 Apco Bldg.—Tel. 2-1444
F. H. WALKER, General Agent

OMAHA 2, NEB.—403 Grain Exchange Bldg.—Tel. Atlantic 5871
L. L. KRATVILLE, General Agent

PITTSBURGH 19, PA.—1104 Gulf Bldg.
Tel. Atlantic 1-0639
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R. R. FEICKERT, General Agent
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SAN ANTONIO 5, TEX.—1015-17 Majestic Bldg.—Tel. Fannin 7951
I. H. GOODWIN, General Agent

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SEATTLE 1, WASH.—1403 The 1411 Fourth Ave. Bldg.—Tel. Elliott 3166
JOHN R. SCOTT, General Agent
NELS HOWE, Commercial Agent

SHREVEPORT 2, 1025 Marshall, Tel. 3-3661
F. A. KEY, Jr., Southern Dist. Traf. Mgr.
410 Market St.—Tel. 3-3661
E. B. HICKMAN, General Agent
F. E. PARKER, Commercial Agent

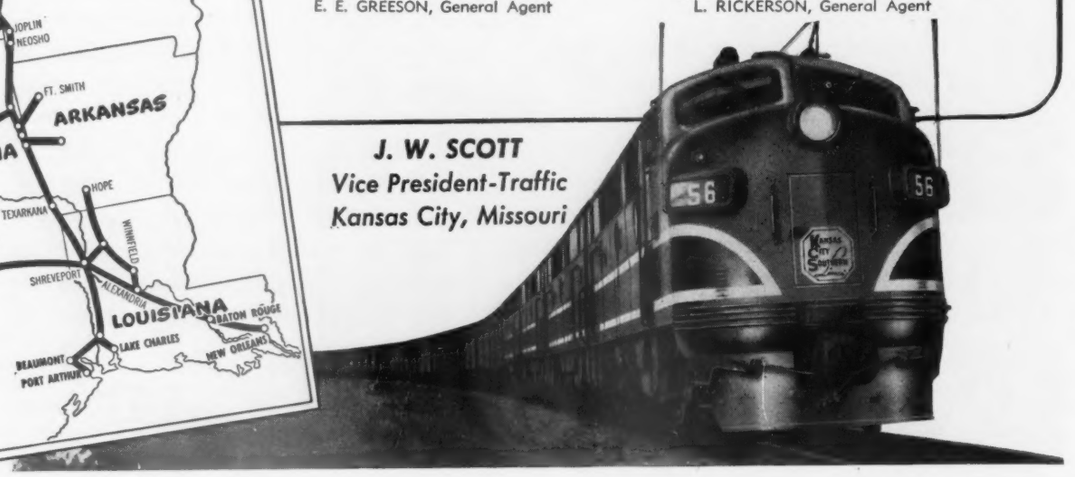
TEXARKANA 24, TEX.—K.C.S. Bldg.
Tel. 3-6361
E. O. SIKES, General Agent

TULSA 3, OKLA.—505-506 Daniel Bldg.
Tel. 3-6040
JOE HARDIN, General Agent

WASHINGTON 4, D. C.—344 Munsey Bldg.
Tel. Republic 4786
G. H. DOUGHERTY, Asst. Dist. Traf. Mgr.

WINNFIELD, LA.—Tel. 4414
L. RICKERSON, General Agent

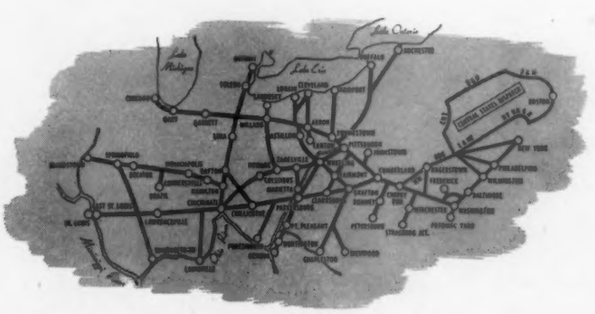
J. W. SCOTT
Vice President-Traffic
Kansas City, Missouri



NOW YOU CAN DO THINGS, MR. SHIPPER!

No longer are your hands tied by not knowing your car's whereabouts. Through B&O's *Automatic Records*, a vital part of Sentinel Service, shippers and receivers are informed when the schedule of a Sentinel car is interrupted—and again when it resumes movement.

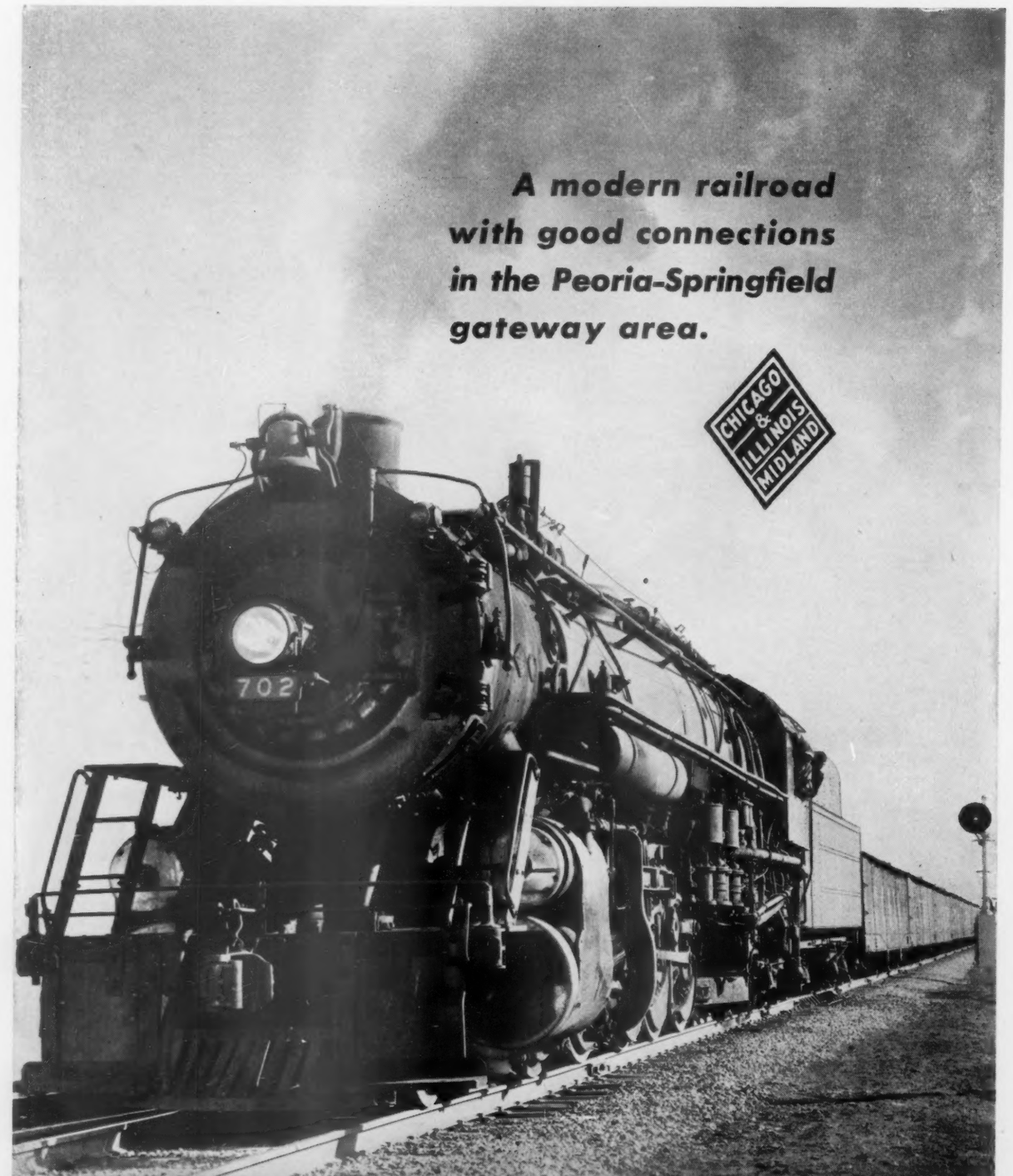
Siding-to-siding dependability plus *Automatic Records* makes Sentinel Service a lifesaver. It is available, on carload freight, to on-line and off-line shippers. Let it ease *your* production and distribution problems. *Ask our man!*



LINKING 13 GREAT STATES WITH THE NATION — B&O

BALTIMORE & OHIO RAILROAD

Constantly *doing things*—better!



CHICAGO & ILLINOIS MIDLAND RAILWAY CO.

"St. Louis Built"
FRISCO
SEABOARD AIR LINE RAILWAY
N&W RY
GM&O
PEORIA & PEKIN UNION RAILWAY CO.
RAILROAD ILLINOIS TERMINAL COMPANY
GREAT NORTHERN RAILWAY
NEW YORK CENTRAL SYSTEM
New York Newhaven Hartford RAILROAD CO.
SOUTHERN PACIFIC LINES
PRR
Santa Fe
GRAND TRUNK RAILWAY SYSTEM
$OO LINE
NORTHERN PACIFIC YELLOWSTONE PARK LINE
CHICAGO MILWAUKEE ST. PAUL AND PACIFIC
NDeM
Rock Island
C&EI
CHICAGO GREAT WESTERN CORN BELT ROUTE RAILWAY COMPANY
These are among the railroads for whom "St. Louis" equipment was built during the years.
St. Louis Car Company
St. Louis, Mo.
CHICAGO NORTH WESTERN SYSTEM
UNION PACIFIC
Burlington Route
ILLINOIS CENTRAL
BOSTON MAINE
M-K-T The Katy
M.&P.
THE SOUTHERN SERVES THE SOUTH
Canadian Pacific
MISSOURI PACIFIC LINES
Lehigh Valley Railroad

JACK BARRY tells of L & N Progress

"The 'Old Reliable' has made and is making outstanding improvements to provide better and faster service to our shippers," says Jack Barry, General Freight Agent of the Louisville & Nashville Railroad.

"During the past year," relates Barry, "The L&N spent $68 million for operations and improvements. During the past five years $125 million has been spent for new facilities and equipment; and right now, $73 million more is outstanding in commitments. The L&N owns 563 steam locomotives and 290 diesels; 67 more diesels are now on order. L&N owns 58,940 freight cars, and another 6,945 are on order. Many miles of new centralized traffic control equipment are being installed for faster, smoother operation."

Rolling stock, track, equipment, power . . . these things are railroads' yardsticks of progress. With these things L&N improves its service and paces the increasing demands of shippers. And the "Old Reliable" will be ready to carry the heavier loads to come, you may be sure of that.

L&N

LOUISVILLE & NASHVILLE RAILROAD

JUST A FEW BLOCKS AWAY from the garment center, packaged freight is quickly transferred from trucks, checked, labeled and put on four-wheel "live" skids.

THREE MINUTES LATER the parcels are carried quickly to waiting box cars by electric low-lift platform trucks.

BALES OF TEXTILES—TO NEW YORK. From textile mills all over the country come millions of yards of fabric, to be made into women's, children's and men's clothing in New York's great garment district.

Custom-tailored Service

For Garment and Textile Shippers

If you're shipping textiles into New York or garments to other parts of the country, there's no faster, more dependable and efficient way to route them than—*via Lackawanna.*

Lackawanna's pier 68, Hudson River, New York City, is near the bustling garment district—making this terminal an ideal point for incoming shipments. Its location eliminates many of the traffic-jammed city streets, saving time and cutting trucking costs.

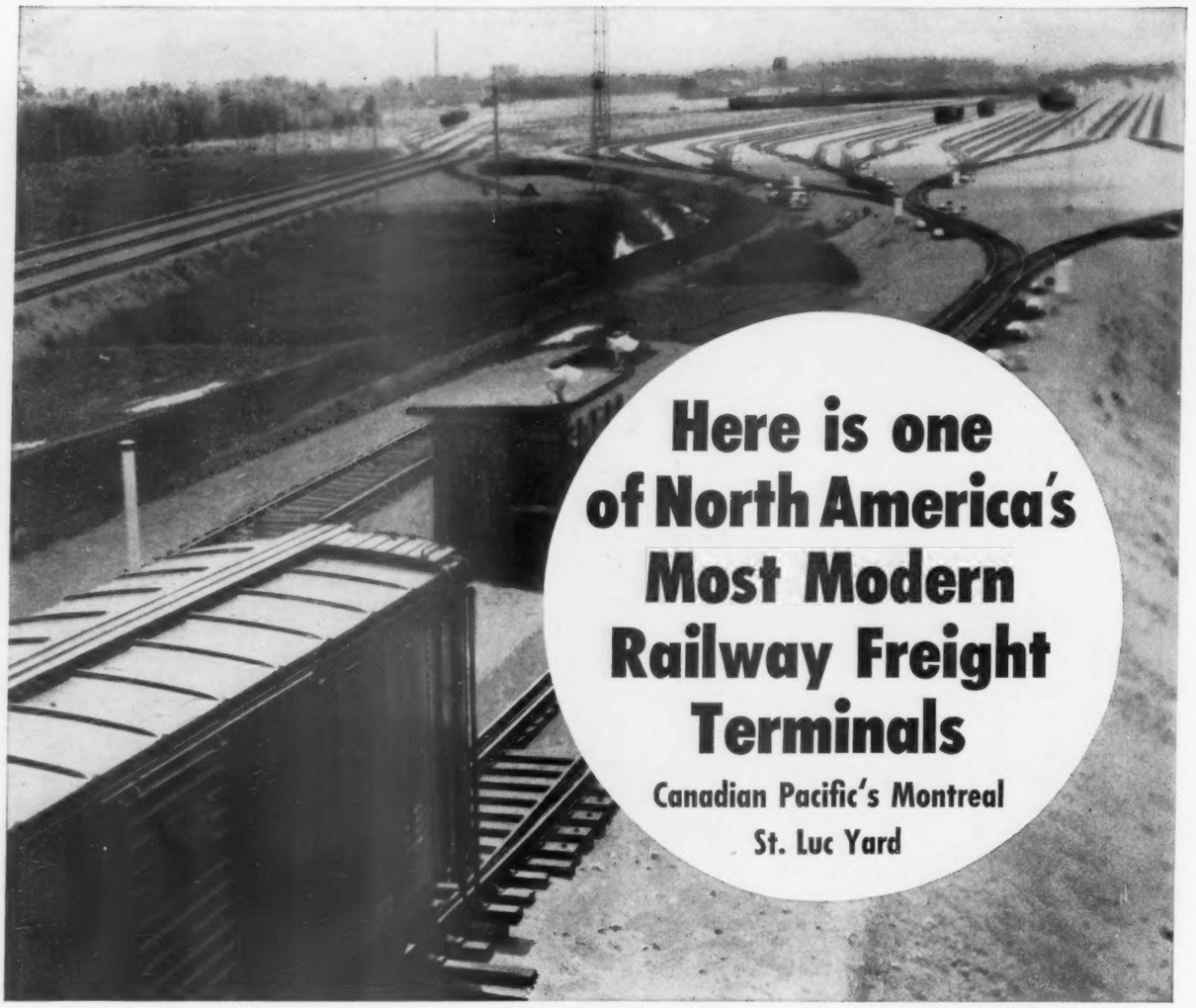
The facilities of this enormous pier with its spacious bulkhead area permit trucks to load and unload hundreds of tons of freight each day. In an industry where style and competition are always fighting against time, the advantages of prompt delivery are of definite value to shippers.

Whether it's garments or textiles, packaged freight, heavy machinery, perishables or bulk traffic, modern Lackawanna efficiency adds up to preferred handling for your shipments. That's why so many of the world's greatest shippers specify Lackawanna—to or through New York.

Lackawanna Railroad

1851-1951

SHIPPERS WHO ARE IN THE KNOW, CHOOSE THE ROUTE OF PHOEBE SNOW



Canadian Pacific is making railroading history at Montreal! Now in operation here is the first retarder hump freight yard in Canada.

Here, too, are other unique and remarkable new precedents in modern railroading: push button system which automatically operates hump switches...Diesel engine operation of all yard switches...an electrical system which classifies the cars, regulates their speed of travel and automatically weighs each car in motion.

The new St. Luc yard is a mile square area... comprises 75 miles of track...a total of 111 tracks with a capacity of 4,869 cars. Every road locomotive in the St. Luc yard operates on "canned steam"...fires are drawn...live steam is pumped back...all smoke is eliminated.

The St. Luc yard is an important step in Canadian Pacific's policy of planned, progressive railroading.

It is accomplishing the vitally important task of helping to speed the growth of Canada. And, it is a typical example of the modern, efficient Canadian Pacific rail service.

Canadian Pacific

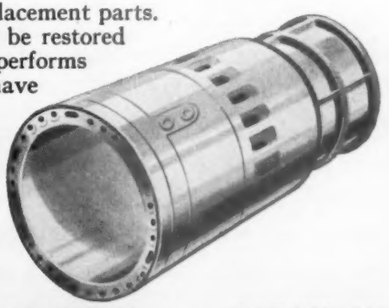
"Pike's Peak or Bust"

And it is never hard to "bust". For covered wagon stragglers, the redskins lay in wait. Now, it's competition that liquidates the inefficient.

Like pioneers who led the way, many Diesel owners *already* have the full competitive advantage that comes from using PORUS-KROME* and VANDERLOY M.

They no longer have the expense of stocking odd-size parts. Instead, their cylinders and crankshafts, no matter how badly worn, are brought back to original dimensions — *just as yours can be.*

No need, *then*, to worry about where to get new replacement parts. For less cost, *all* cylinders and crankshafts can be restored repeatedly. And PORUS-KROME wears much longer, performs more efficiently — so much so that it pays to have original equipment processed with it.



That's standard practice, now, with many Diesel owners. Competitively, they're headed for "Pike's Peak"—and with very little chance to "bust".

**PORUS-KROME is a dense, hard, wear and corrosion-resistant chromium, produced by the Van der Horst Corporation of America, and which gives working surfaces an infinite number of tiny oil-retaining reservoirs for perfected lubrication.*

VAN DER HORST CORPORATION OF AMERICA • OLEAN, N. Y.

U. S. PATENTS 2,048,578, 2,314,604 and 2,412,698

PORUS - KROME VAN DER HORST

Good for the Life of your Engines

A MILESTONE IN 1851 100th ANNIVERSARY Great Lakes to the Sea 1951 AMERICAN HISTORY

Erie Railroad

Look what's coming down the track!

Don't let this machine scare you—it helps to give you a smoother ride and does the same job for freight!

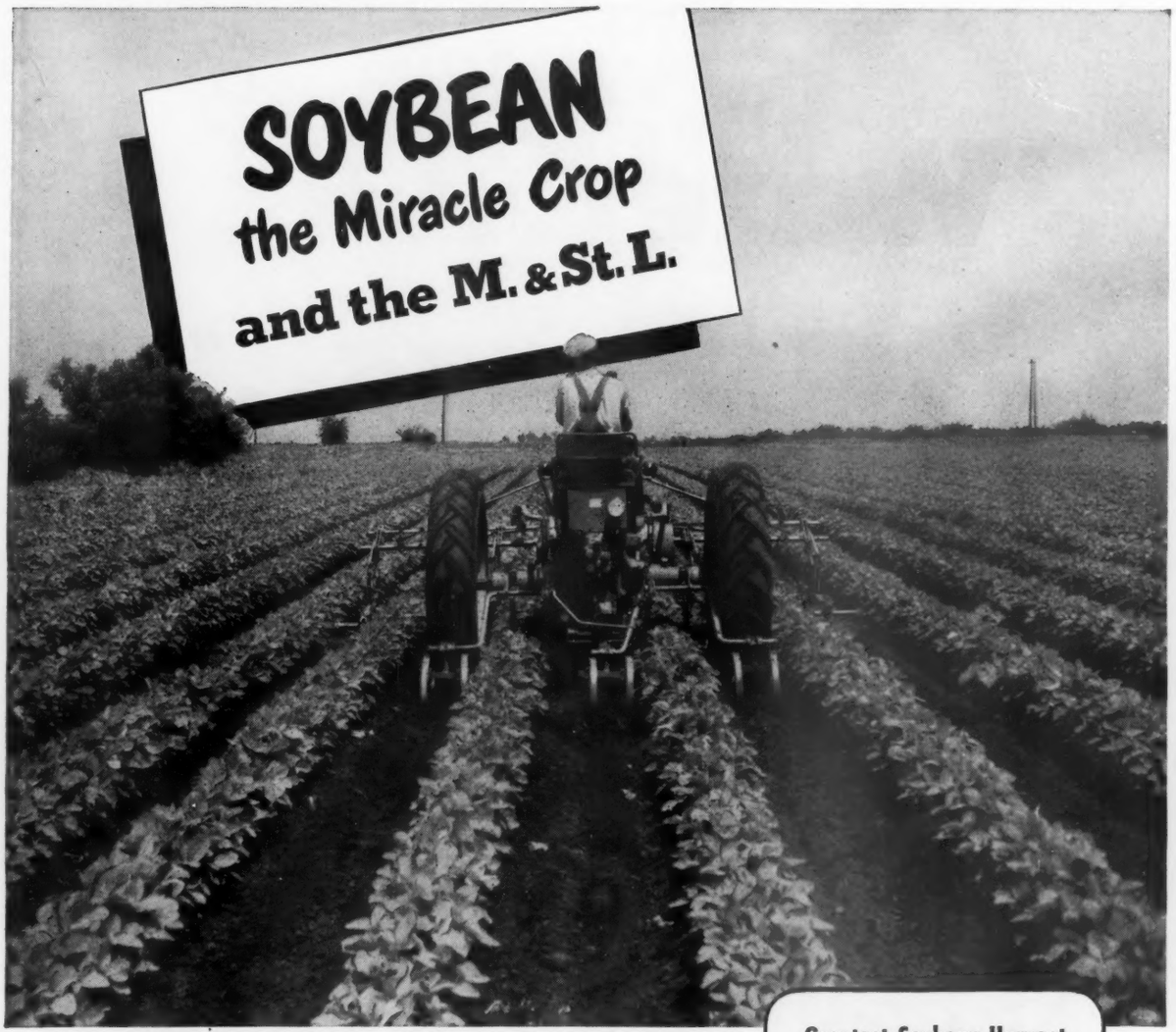
It is Erie's new stone ballast cleaning machine that works along the track on its own power. It scoops up the ballast to a depth of 14 to 18 inches, shakes it clean through a vibrating screen and shoots the dirt out beyond the tracks. Clean ballast that drains well keeps the bumps out of the ride.

This new machine does the work better and faster than older methods and is another example of Erie's progressive railroading—building a better railroad for the safe, dependable transportation of passengers and freight. Continuous improvements such as this keep the Erie ready to serve our country well in peacetime or war.

Erie Railroad

Serving the Heart of Industrial America

ERIE



Another record harvest of Soybeans in America seems certain for 1951. Each year, this Miracle Crop wins a more important place as a keystone of agricultural prosperity. Especially is this true in the Great Midwest, where more than half of the nation's Soybeans is grown in four rich farm states served by

The Minneapolis & St. Louis Railway

For years, the M. & St. L. has been a leader in promoting Soybeans in its territory. It has worked hard to increase production and improve quality of the crop, along with providing efficient transportation for Soybeans and their many products.

Since 1871, the M. & St. L. has been an important carrier of products of fertile farms. Today a modern, Diesel-powered Railway, it networks some of the richest Soybean areas and directly serves several large processing plants.

Fast Dependable Freight Service for Agriculture and Industry Since 1871

Greatest Soybean Harvest Forecast for 1951

In 1951, the Soybean crop is expected to be the greatest in history. Last year, the United States harvested 287,010,000 bushels, then an all-time record. Of this enormous crop, 154,223,000 bushels or 54 per cent was grown in the four M. & St. L. states: 94,752,000 bushels in Illinois; 42,262,000 in Iowa; 16,384,000 in Minnesota; and 825,000 in South Dakota.

This year, the acreage is even larger than in 1950, when 13,291,000 acres were harvested for Soybeans, in addition to 2,117,000 acres grown for hay, pasturage and fertilizer.

The **Minneapolis & St. Louis** *Railway*

General Offices: 111 East Franklin Avenue, Minneapolis 4, Minn.

"Water... Taxes..."

The growing water shortage throughout the nation presents a perplexing problem for industry — says a recent news item.

The same article stresses taxes as another factor of major importance to industry.

The solution to these problems will be found in the Seaboard Southeast. Here we have an abundance of water for all industrial needs.

Taxes are favorable to industry in this area. The "business climate" is conducive to profitable manufacture. That is one of the big reasons why so many industries are coming to the Seaboard Southeast.

Let us give you further details. Our experienced plant location service is available to you without cost or obligation. All negotiations are held in strict confidence.

Address: Warren T. White, Assistant Vice President,
Seaboard Air Line Railroad,
Norfolk 10, Va.

Photo by Clarisse

Got Traffic Troubles, Mister?

That's tough. But if they have to do with getting a shipment safely somewhere at a certain time . . . and keeping track of it along the way, let's hear about it. That's where dependable delivery and our reliable tracing system meet the situation.

Maybe it's a question of routing or of proper protection for perishables. Whatever it is, it's our job to help you. That's why we have trained traffic men from coast to coast.

We want you to think of Union Pacific as more than just a carrier. Think of us as part of your organization ready with information and suggestions to help you with traffic problems. Call in your nearest U. P. freight representative at any time.

Be Specific – Ship "Union Pacific"

(Offices in 70 cities throughout the U. S. A.)

Here's our Hat ...and Here's our HURRY!

Katy's bringing a mighty powerful fleet of Diesels, Southwest!

For '51 we're on the run . . . on the run with more and more Diesel power for the Southwest shipper and traveler.

More Diesel yard switchers to trim minutes from terminal transferring times. More, and still more, new, improved giant road Diesels to pull longer freights, farther faster for the vigorous Southwest of an alerted nation.

In fact, we're "re-doing" Katy freight service. Blending the MODERN with the TRADITIONAL . . . the modern, smooth, speedy Diesel power with the fine old dependable Katy service the Southwest has known, right down the line, for nearly 80 years.

Yes, the Katy is stepping up the pace . . . "quickening the heartbeat" of the Southwest. Why? Because the Katy has, and always shall, serve the Southwest with the finest.

Your local Katy representative will be glad to tell you even more about Katy's many new plans . . . and how you may benefit by shipping and traveling Katy, Southwest.

M·K·T
KATY RAILROAD
MISSOURI-KANSAS-TEXAS

THE KATY RAILROAD

NATURAL ROUTE SOUTHWEST

38

Memo to Railroads and Shippers:

HOW TO MAKE THE MOST OF YOUR GAEX CARS

The nearly 400 GAEX-DF Cars in regular service on 14 railroads have established all-time records in building railroad car profits and in eliminating damage in transit. Percentage of loaded miles, already higher by far than with standard cars, is climbing. On some railroads, *half* the lading carried in these cars has been reclaimed from trucks because in the GAEX, railroads have recognized the needs of the manufacturers of "packaged" products. These shippers of boxes, cartons, barrels and drums find it safe, and more convenient and cheaper to "ship by rail". These railroads are meeting highway competition with modern equipment and service.

Because of the current critical steel situation, the 400 cars now in service must work more and faster to accommodate the increasing number of shippers who need them. You can help —and thus make more cars available for your own use.

How to get the MOST out of your GAEX-DF cars

How you can *help yourself*— and help ease a critical situation at the *same time*

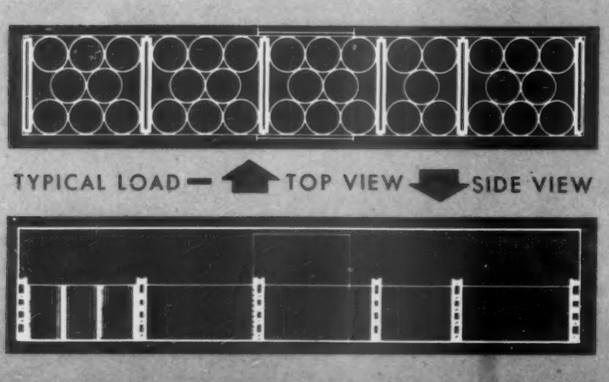
Under the new Railroad-Shipper-GAEX partnership, the railroads operating GAEX-DF Cars are doing a most efficient job of keeping the cars in constant service to satisfy the needs of shippers. Employees all along the line are alerted to keep them moving—to get them to their destinations and get them back. More often than not, shippers are notified ahead of time when a car will be available in their locality, so that a return load will be ready and waiting. This alertness on the part of railroads, combined with shipper demand for the car, *keeps* GAEX Cars in profitable operation.

Shippers can increase GAEX usefulness and eliminate lost time by making faster turn-around of the available cars: this means, in the end, that the shipper who saves time will be helping himself to more GAEX Cars, more damage-free shipping—and more customer and dealer satisfaction, because his product arrives at the right place, in the right condition, and on schedule. *The railroad and the shipper both profit when full advantage is taken of GAEX-DF efficiency.* Below are some hints: for more information send coupon on back page of this insert for the new GAEX Operations Book.

1 HEAVIER LOADS WITH LESS DAMAGE IN TRANSIT

. . . a great asset if you make the best of it—

100,000 pounds or more of lading is often shipped in GAEX Cars without the slightest damage. Careful load planning divides bulky, hard-to-hold large loads into small, properly braced loads. The chart below shows a typical load arrangement divided by DF loader cross-members. Even the severest bumping cannot break a load loose when it is well secured in units in the GAEX-DF Car. Remember: plan your load carefully, move packages in fast, then place proper number of cross-members to hold each load unit.



2 FASTER LOADING WHEN YOU LEARN THE TRICKS

. . . experienced users save man-hours—

The GAEX-DF Car loads faster than other cars after the loaders grasp the simplicity of the damage-free loading device. Cross-members snap into place quickly, bulkheads and deckboards help make separated units of the load, no matter what goes into the car. The equipment needed is immediately at hand; no waiting, no expensive lumber or labor is called for. Experienced loading supervisors from General American-Evans teach your men the tricks—that is *our* contribution to cut down delays and to keep GAEX Cars in constant "pay-load" service.

3 SYSTEMATIC UNLOADING FREES THE CAR QUICKLY

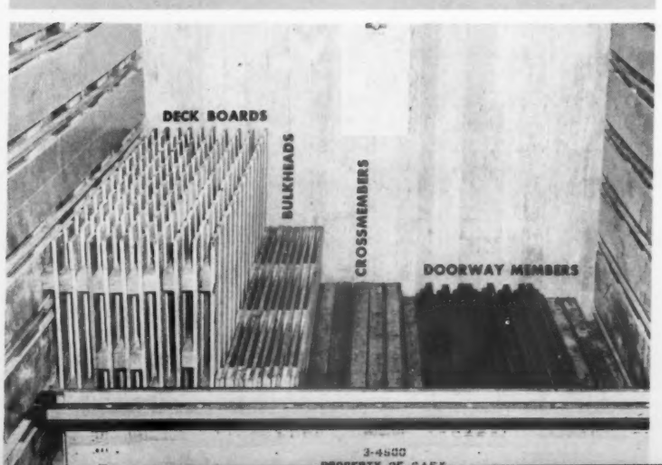
. . . no nails to pull or dunnage to remove—

Door members, cross-members and bulkheads should be stowed on the loading dock until half the car is empty; from then on, cross members, etc. can best be stowed in the empty end to save time. It takes less time and trouble to unlatch and carry out cross members than to tear out lumber, pull it apart and carry it away. Unloading lift trucks can move in and out of the wide door freely and can't damage the sectional steel floors. Regular GAEX users find unloading time reduced by as much as one-third. *Planned* unloading takes full advantage of the *planned* load.

4 LEAVE IT READY FOR THE NEXT USER—IT MAY BE YOU

. . . save time and get the car back quicker—

Only a few minutes are required to place loose equipment in one end of the car after unloading. Store deckboards, bulkheads, cross members, and door members as in the picture below to save time for the next shipper, and prevent loss and damage to equipment. Insufficient equipment might cause serious delay to the next load, and *any "time" you can save means quicker return of the car to you.* More cars will be made available as soon as possible, but under present circumstances, not soon enough to supply the growing demand. Anything shippers do to help the railroads operating GAEX Cars will ease this critical situation.



How to get the MOST out of your GAEX-UP cars

We've done our best to make

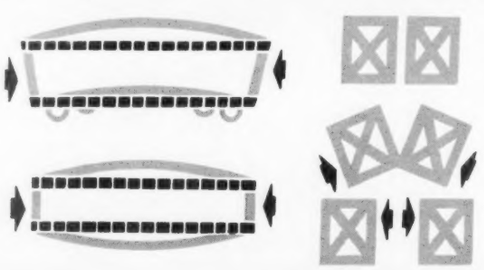
GAEX

...a Car to meet today's needs"

The GAEX-DF is the *strongest* and most *indestructible* car ever supplied to railroads. It is built to stay out of the shop. That's why GAEX Cars continue day after day to carry heavy loads. In one case a GAEX-DF Car was derailed at considerable speed. When the car was returned to the track its load was delivered to destination without loss. That kind of ruggedness is important in these critical times.

—why lading is damaged in ordinary shipping

Severe switching or lateral shocks actually "bend" and "bulge" a standard boxcar. This causes tightly packed lading to shift and loosen. The free space thus created spells trouble with every succeeding bump or vertical bounce. Multiple reinforcement of the GAEX, combined with Chrysler high-speed, soft-riding trucks, reduces bulging, bending and vibration in the GAEX-DF.



MAIL THIS COUPON FOR COPY OF GAEX BOOK

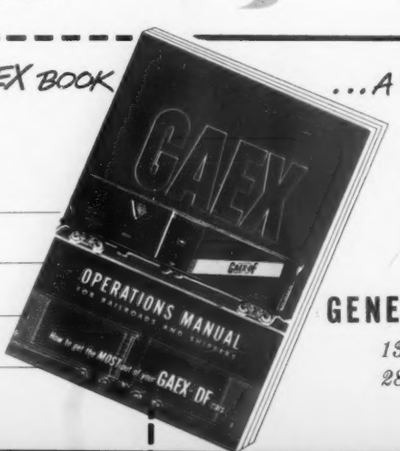
General American-Evans Company
2842 West Grand Blvd., Detroit 2, Michigan

NAME _____

ORGANIZATION _____

STREET _____

CITY _____ ZONE ____ STATE _____



...A HANDY MANUAL FOR USERS

This new book tells how to make quick, safe loads, with many typical examples. It carries full instructions for making the most of GAEX efficiency.

GENERAL AMERICAN-EVANS COMPANY

135 So. LaSalle St., Chicago 90, Illinois
2842 West Grand Blvd., Detroit 2, Mich.

The Cost to the Railroads . . .

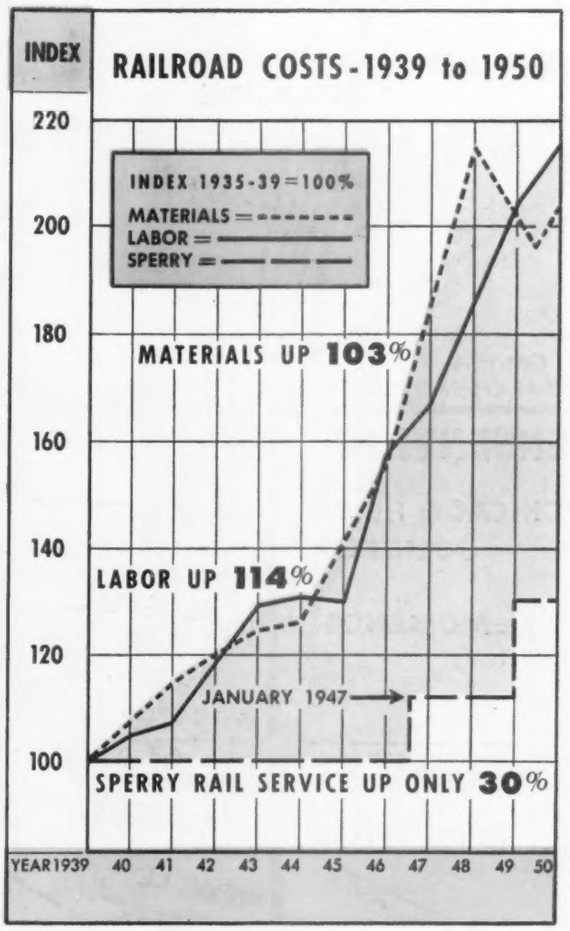
for **MATERIALS AND LABOR** increased over **100%** since 1939

for **SPERRY RAIL TESTING** increased only . . **30%** since 1939

Sperry Rail Service has not yet been forced to increase prices in proportion to the general increase in the cost of materials and labor because:

1. **CONTINUOUS RESEARCH AND DEVELOPMENT . . . produced better equipment, combined with . . . .**

2. **EXTENSIVE TRAINING AND OPERATING PROCEDURE IMPROVEMENTS . . . . resulted in economies which have offset a major portion of increased material and labor costs to Sperry.**



* The Bureau of Railroad Economics completed, in 1950, an index of railroad material prices using the period from 1935 to 1939 as 100.

Thus in a period of more than ten years, Sperry's prices for rail testing have risen only 30%; while labor costs have climbed 114% and materials have progressed to 103% above previous levels.

Sperry
FIRST IN RAIL TESTING

SPERRY RAIL SERVICE

DIVISION OF SPERRY PRODUCTS, INC.

Danbury, Connecticut

NEW YORK, N. Y. CHICAGO, ILL. ST. LOUIS, MO.

Here is the key to Expedited *THROUGH* FREIGHT SERVICE

Important to shippers everywhere:

The Milwaukee Road's Terre Haute division via Bensenville connects all points north, northwest and west of Milwaukee, and west of Chicago with lines to or from the South and East.

Ask your nearest Milwaukee Road representative how he can expedite the delivery of goods for you, or write

H. S. ZANE
Freight Traffic Manager
Chicago, Illinois

THE MILWAUKEE ROAD

The map tells the story!

Many types of freight cars ...built well

BY

Pullman-Standard

It takes all sorts of freight cars to move the products of America's factories, fields, mines, and forests. And it takes many kinds of "know-how" to build these cars efficiently and economically, for utmost dependability in service.

Today, Pullman-Standard's versatile shops are helping to relieve car shortages in numerous classifications. Not only boxcars, but hopper cars, gondolas, flat cars, ore cars, and various specalized types are moving along the Pullman-Standard production tracks.

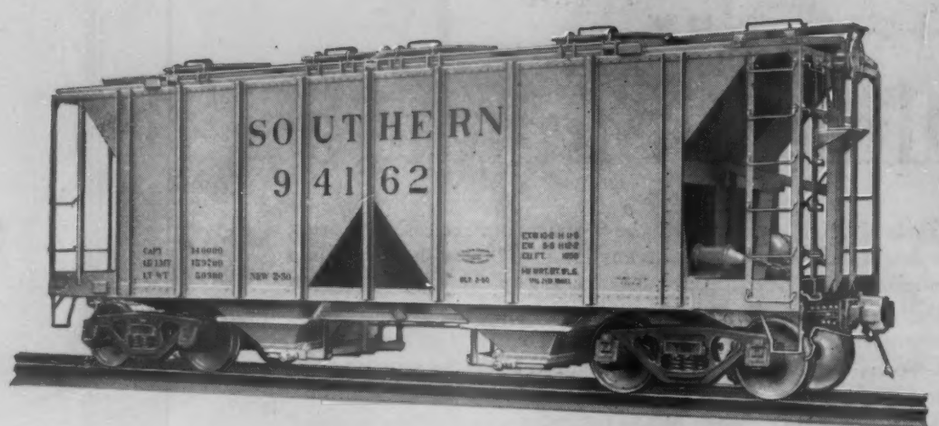
Some of these types are pictured on the following pages—"late models," built in 1950 or 1951. And all are engineered to confirm Pullman-Standard leadership in *contract carbuilding* for the railroads of America.

NEXT PAGE, PLEASE

FOR SANTA FE
Pullman-Standard builds cars that can "take it." With welded underframe and floor, this 95-ton husky will stand the gaff.

MANY TYPES

Pullman



FOR SOUTHERN RAILWAY
All-steel 70-ton covered hopper cars for carrying cement. Capacity: 1,958 cu. ft.

FOR SEABOARD
This 70-ton covered hopper car was built in 1951 . . . for hauling phosphate. Up-to-date specialized construction for specialized service!

FOR DULUTH, MISSABE & IRON RANGE
For the rugged duty of moving vital iron ore . . . ore cars for the D. M. & I., ruggedly built by Pullman-Standard.

Standard

BUILT WELL

FOR LOUISVILLE & NASHVILLE
The L. & N. and Pullman-Standard have worked hand in hand in perfecting all-welded hopper cars. L. & N. orders for this type now total 5000.

FOR PENNSYLVANIA
A high-side gondola with drop ends. This 70-ton all-steel freighter embodies advanced structural details.

FOR ATLANTIC COAST LINE
Features of this 50-ton all-steel pulpwood car, "New 10-50," are its ¼-inch plate floor and built-up end racks.

NEXT PAGE, PLEASE

for boxcar leadership ... the PS-1

Standardized boxcar design, as pioneered and developed by Pullman-Standard, is exemplified by the PS-1 . . . a *quality* boxcar, *efficiently* produced.

Since the first PS-1 was delivered, in June, 1947, more than 32,000 of these sturdy, dependable cars have rolled into service and 16,000 more are on order. And assembly-line production methods have kept costs *down* while sending output *up*.

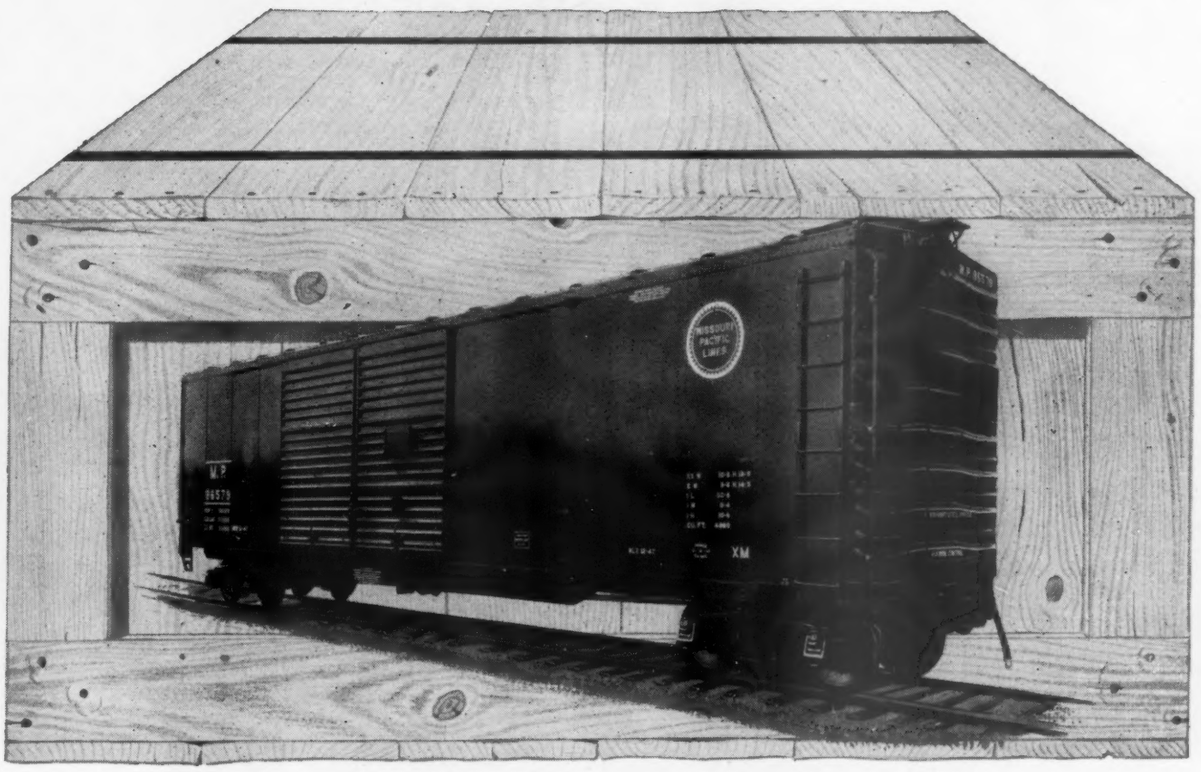
Railroads that have not yet bought PS-1's should investigate a car built to go beyond their own exacting specifications.

Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH
BIRMINGHAM • SAN FRANCISCO

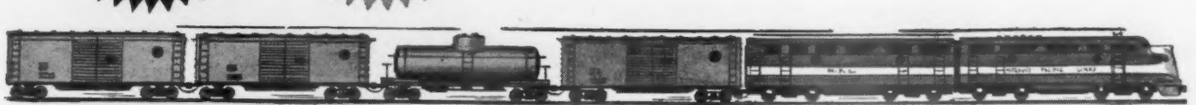
a Sure way to Shipping Satisfaction



You can *depend* on MISSOURI PACIFIC to whisk your shipment . . . to its destination swiftly, smoothly and on time . . . regardless of size or classification. Our great and ever growing fleet of powerful diesels and modern freight cars of every type are at your disposal. We've also gone all out for Train Radio Communication and Centralized Traffic Control as part of our Modern-Progressive improvement program to provide even faster, more dependable schedules. You get extra siding-to-siding satisfaction when you include MO-PAC in your shipping plans. Call any MO-PAC freight representative for full details!

MISSOURI PACIFIC LINES

1851 A CENTURY OF SERVICE 1951

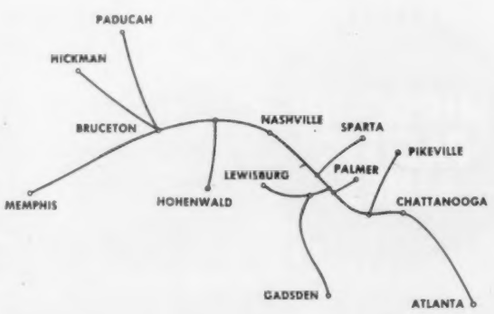


SERVING THE WEST–SOUTHWEST EMPIRE

DIESELS FOR DIXIE!

In order to serve the fast-paced transportation needs of the New South, the NC&StL Railway has spent *$17,300,000* to change over completely to diesel power. Up front now on *every* NC&StL passenger and freight train are sleek, powerful diesel locomotives. All switch engines are diesels, too—iron giants with a velvet touch. To travelers this means a smoother, cleaner, more comfortable ride. To shippers it means safer, faster, more dependable freight transportation.

For over a century, the NC&StL has held steadfastly to one goal—constant improvement of equipment—constantly better service. And that is why these millions have been spent—to give the South transportation service that is . . . *the best!*



N.C.&St.L.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS RY.

An Important Contribution

COMMONWEALTH
CAST STEEL UNDERFRAMES

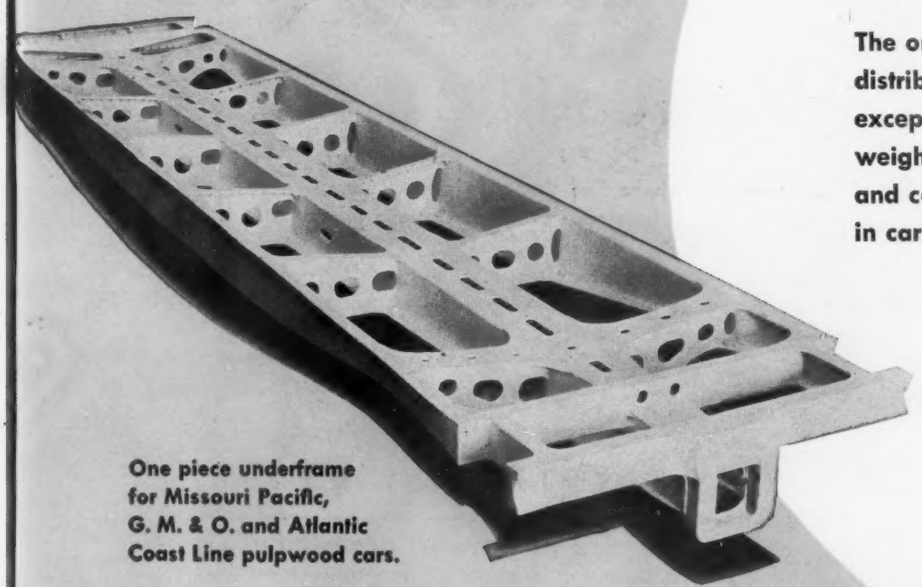
For the Large Freight Car Program

As part of the Defense Preparedness Program, America's railroads placed orders in 1950 for 2000 COMMONWEALTH One-Piece Cast Steel Underframes for flat cars, pulpwood cars and "special service" freight cars.

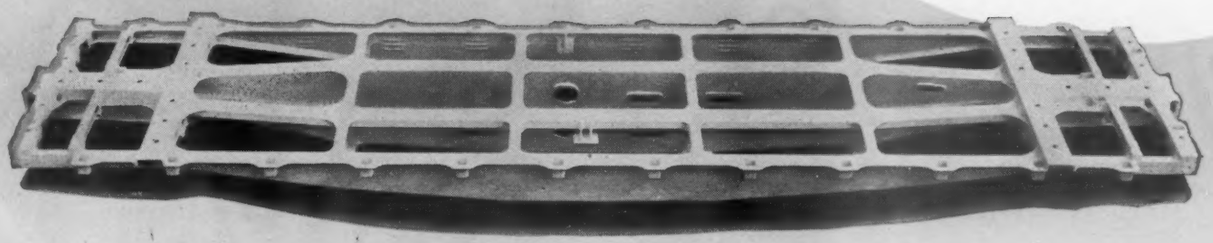
The one-piece construction, with metal distributed where it is needed most, provides exceptional strength without increase in weight, eliminating welded or riveted joints and connections, and saving manpower in car building.

COMMONWEALTH Underframes are practically indestructible. They assure increased availability of freight cars with longer service-life and greatly reduced upkeep costs.

Consult us about your requirements.



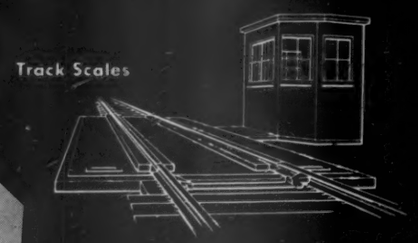
One piece underframe for Missouri Pacific, G. M. & O. and Atlantic Coast Line pulpwood cars.



One piece underframe for G. M. & O. and Union Pacific flat cars.

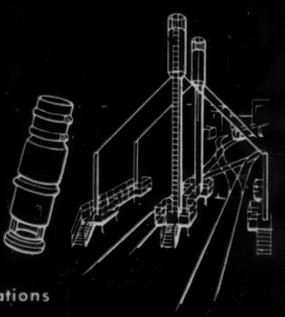
GENERAL STEEL CASTINGS

GRANITE CITY, ILL. • EDDYSTONE, PA.

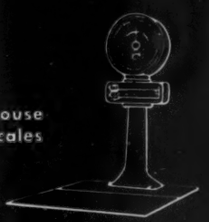


Track Scales

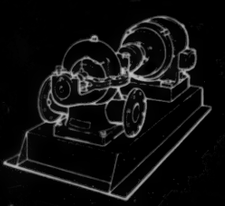
Turbine Pumps



Sanding Stations



Warehouse Scales



Centrifugal Pumps

Sign of Lower Cost Railroading . . .

In the Fairbanks-Morse line there are almost unlimited opportunities to cut costs in every phase of railroad operation and maintenance.

Rail cars . . . scales . . . sanding stations . . . pumps . . . motors . . . off-track lighting and power equipment . . . a range of sizes and types, each with a background of proved long-time, low-cost performance for railroads everywhere—that's the Fairbanks-Morse line.

Every Fairbanks-Morse branch office is staffed with railroad equipment experts. Call on them, or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,

a name worth remembering

RAILROAD EQUIPMENT • RAIL CARS • PUMPS • SCALES • ELECTRICAL MACHINERY • DIESEL AND DUAL FUEL ENGINES DIESEL LOCOMOTIVES • MAGNETOS

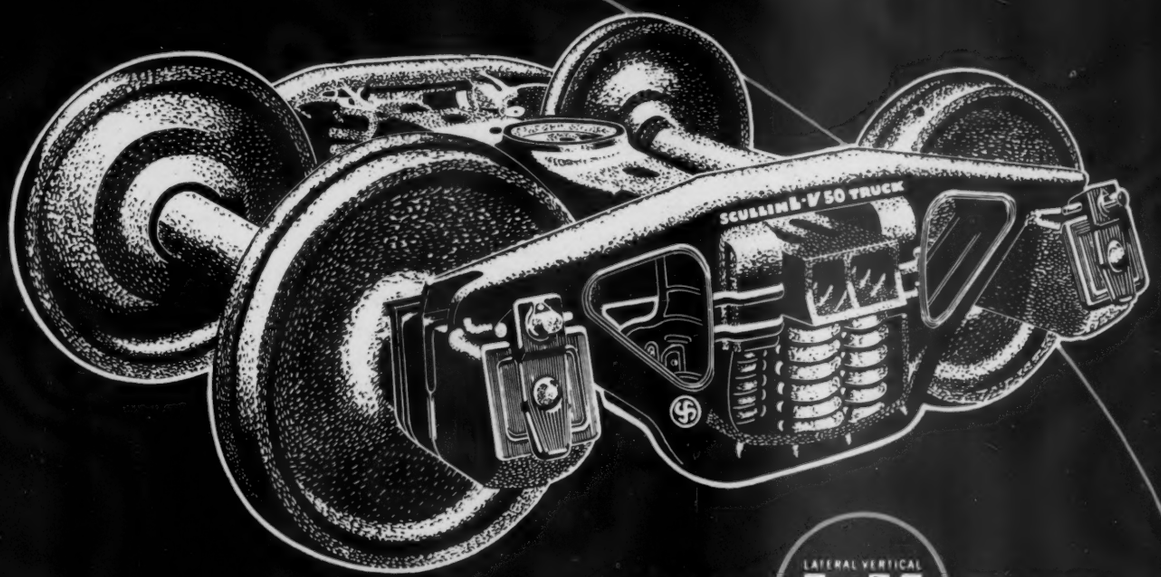
Portable Dial Scales

Rail Cars

Generating Sets

sidetrack your lading damage problems . . . give high-speed profits the right-of-way . . .

ORDER



SCULLIN L 50 V TRUCKS

LATERAL VERTICAL
CUSHIONED MOTION

THE SMOOTHEST TRAFFIC-BUILDERS BETWEEN LCL AND YOUR RAILS

STEEL CASTINGS MANUFACTURER

NEW YORK
CHICAGO
BALTIMORE
RICHMOND, VA.

Photo Courtesy
Missouri Pacific Lines

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

NEW! Dining-club Lounge

NEW! Accommodations

NEW! Overnight Schedule

NOW! new comfort between Chicago and Duluth-Superior on THE LAKER

There's news in main line travel between Chicago and Duluth-Superior—Soo Line's newest name-train —the "Laker"—Diesel powered all the way!

NOW a greater variety and number of private rooms (bedrooms, bedroom suites and roomettes) available.

NOW you can enjoy the beverage of your choice and the "best meals on wheels" in the *new* Dining-Club Lounge.

NOW you'll find the *new* schedule timed for *your* convenience at both ends of the route.

Unchanged is traditional Soo Line courtesy and service. On the "Laker," as on all Soo Line trains, you will find the same thoughtfulness, the same readiness to serve you that for years has made Soo Line the popular line with discerning travelers.

When *YOU* go to Chicago or Duluth-Superior take the best—take the *"Laker"!*

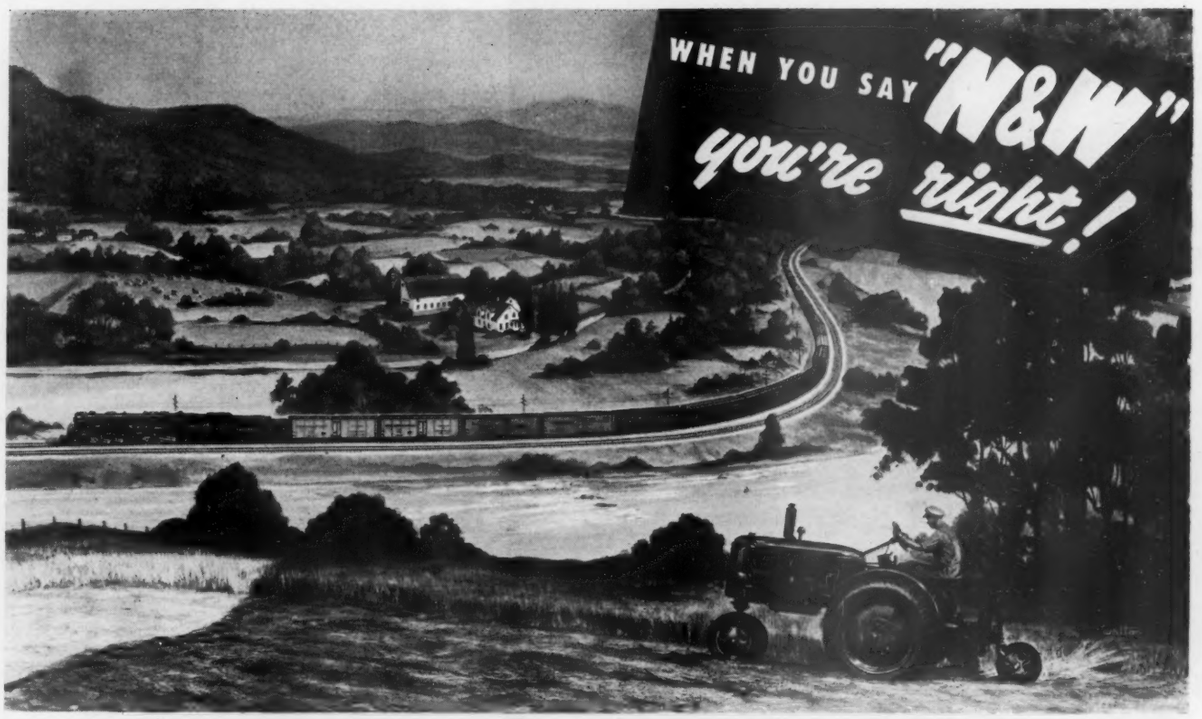
NEW SCHEDULE

Read down:		Read up:
7:00 P.M.	Lv. Duluth	Ar. 8:15 A.M.
	(Soo Line Terminal—Superior St. at 6th Ave. W.)	
7:30 P.M.	Lv. Superior	Ar. 7:55 A.M.
	(Soo Line Station—Winter St. & Ogden Ave.)	
5:35 A.M.	Ar. Waukesha* . .	Lv. 9:20 P.M.
8:15 A.M.	Ar. Chicago	Lv. 6:30 P.M.
	(Grand Central Station—Harrison and Wells St.)	

*Convenient service to and from Milwaukee via M.R.T. & S.

SOO LINE

THE LAKER



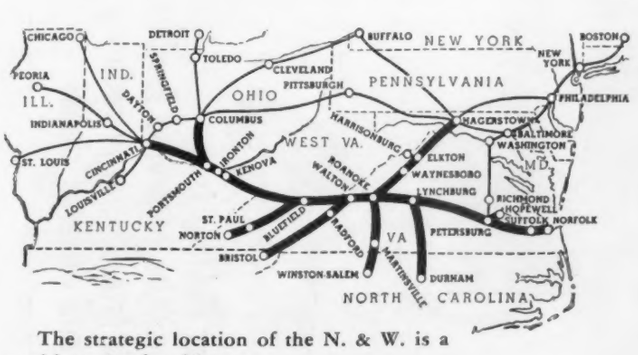
IN FREIGHT PROGRESS...

DEPENDABILITY IS THE KEYSTONE!

The products of America are of no value unless they are moved. That's the job for the freight train. From the industrial mid-West at Cincinnati and Columbus, across the mountains and down to the great Port of Norfolk on the Atlantic coast, and to the North and South, the time freights of the Norfolk and Western Railway are moving the products of the land . . . every hour of every day and night, in all kinds of weather.

The keystone of N. & W. freight progress and service is summed up in one word . . . *dependability.* For this railroad's time freights operate on schedules that are under constant study, that are carefully planned and rigidly enforced. Their's is habitual "on time" performance.

And, to *insure* continuously better service, the Norfolk and Western consistently plows back a large part of its earnings into the transportation plant. Since World War II, the railroad has spent and authorized $163,500,000 for new equipment and other improvements all over the railway. When you specify Norfolk and Western for your freight, you get dependability. That's why — You're RIGHT, when you say "N. & W."!

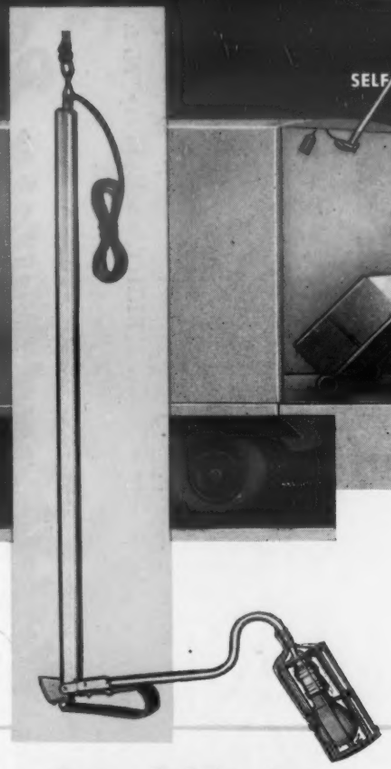


The strategic location of the N. & W. is a positive value for shippers.

The DEPENDABLE Norfolk and Western Railway

NEW-- PYLE-NATIONAL ANCHORLITE T. M. REG.

THE SUSPENDED *INSIDE AND UNDERSIDE* ILLUMINATOR



Proper lighting is a prerequisite of proper loading which is essential in reducing loss and damage claims

REDUCES COST AND SPEEDS FREIGHT LOADING

Pyle-National Anchorlite installations in freight terminals have already effected important savings in labor and maintenance expense...savings far greater than the railroad companies had expected from their modest investment in this convenient, economical source of good lighting at loading platforms.

It was quickly discovered that Pyle Anchorlites kept the floors clear and eliminated the need for extension cords and portable lamps.

Man hours were no longer wasted finding extension cords and plug-in outlets, untangling cords, driving nails for portable lamp support, or replacing lamps broken by dropping.

Costly replacements of stolen cords or cords damaged by constant handling, dragging, or by truck wheels were eliminated.

Fire and accident hazards due to short circuits, ungrounded equipment or tripping over cords were eliminated as well.

THE PYLE-NATIONAL COMPANY

1356 North Kostner Avenue • Chicago 51, Illinois

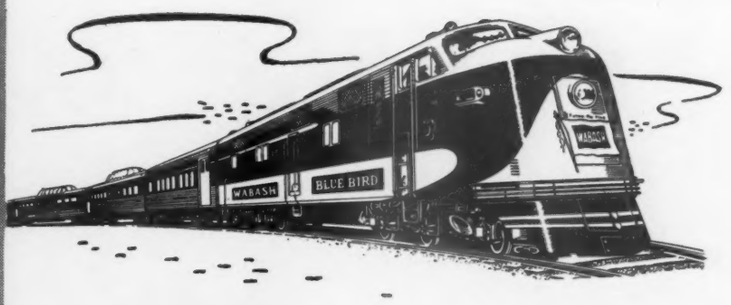
BRANCH OFFICES AND AGENTS in principal cities of the United States
EXPORT DEPARTMENT: International Railway Supply Co., 30 Church St., New York
CANADIAN AGENT: The Holden Co., Ltd., Montreal, Toronto, Winnipeg, Vancouver

SINCE 1897

LOCOMOTIVE HEADLIGHTS • GYRALITES • TURBO-GENERATORS • FLOODLIGHTS • PLUGS & RECEPTACLES • MULTI-VENT AIR-DISTRIBUTION

WABASH

PROGRESS



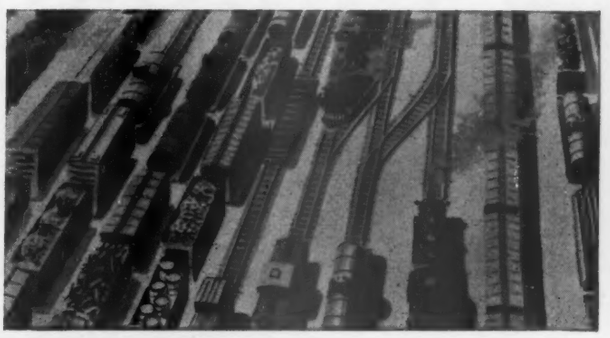
GIVES YOU LUXURY TRAVEL

GIVES YOUR SHIPMENTS SUPERIOR SERVICE

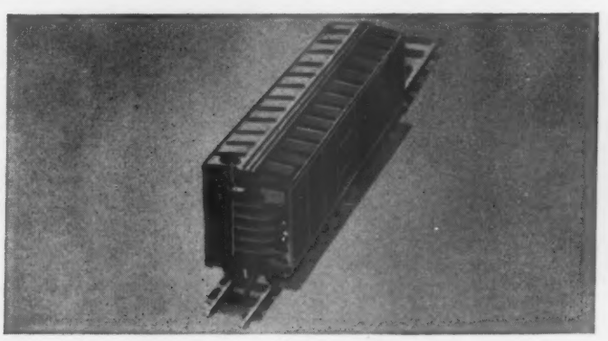
A CONTINUOUS MODERNIZATION PROGRAM

In just the past *five years,* Wabash has invested $3,744,272 in new passenger trains and equipment — $32,556,646 in new diesel engines — $19,928,565 in new cars — and $11,535,293 to improve tracks and yards. It all adds up to an outlay of $67,764,776.

These Wabash dollars spell "progress" . . . are proof that we're doing everything possible to give you and your freight better transportation than ever before.



Improved tracks and yards for swifter, smoother service over America's vital transportation link.



New cars... box cars... flats... hoppers... special cars... added to thousands of others in tip-top condition.

P. A. SPIEGELBERG
Freight Traffic Mgr.
Railway Exchange Bldg.
St. Louis 1, Mo.

WABASH RAILROAD

MODERN SERVICE IN THE HEART OF AMERICA

Non-Spin Wheel Hand Brake

This friction clutch makes it easy—and safe—for the brakeman to operate the Equipco Non-Spin Wheel Brake. He can do it all with the wheel—turn *right* to *set*—turn *left* ("inch it along") to *release*. There is no spinning of the wheel; no sudden unwinding of the chain; no possible way for this clutch to jam. Like other types of Equipco Hand Brakes, it is built for long, economical and dependable service . . Write for literature. Type 3750-A. A. A. R. Certified.

UNARCO

Equipco Hand Brake Department

UNION ASBESTOS & RUBBER COMPANY

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

FRISCO

DIESEL LOCOMOTIVE INSPECTION REPORT

FAIRBANKS-MORSE 1000 HP. SWITCHERS

Here's the Frisco's story of FAIRBANKS-MORSE performance. Their 1950 records show that FAIRBANKS-MORSE 1000 hp. Locomotives comprise 12.37% of their Diesel switch engine fleet... that they did 17.13% of the yard switching... that they required only 8.6% of the total Diesel switch engine repair cost.

... Read file for details.

FRISCO

FORM NO. 2-A

FORM MP 56 LOCAL
(REV. JUNE 1949)

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY
LOCOMOTIVE INSPECTION REPORT

LOCOMOTIVE - NUMBER 272
UNIT NUMBER
INITIAL

RAILROAD

INSTRUCTIONS - EACH LOCOMOTIVE MUST BE INSPECTED AFTER EACH TRIP OR DAY'S WORK AND REPORT MADE ON THIS FORM, WHETHER NEEDING REPAIRS OR NOT. PROPER EXPLANATION MUST BE MADE HEREON FOR FAILURE TO REPAIR ANY DEFECTS REPORTED, AND THE FORM APPROVED BY THE FOREMAN, BEFORE THE LOCOMOTIVE IS RETURNED TO SERVICE.

INSPECTED AT TULSA TERMINAL, TIME ____ M. DATE ____ 19 ____

	SHIFTS 1ST	2ND	3RD	WORK PERFORMED SYM. NO.
LOCO. CREW OPERATING TIME	START-		START-	
FUEL METER READING - START				
FUEL OIL LEAKS				
LUBR. OIL PRESSURE - IDLING				
AT FULL DIESEL SPEED				
LUBR. OIL LEAKS				
LUBR. OIL ADDED, GALS.				
COOLING WATER LEVEL				
COOLING WATER TEMP., LOWEST				
COOLING WATER TEMP., HIGHEST				
PRESSURE OIL IN COMPRESSOR				
FUEL OIL PRESSURES				
CONDITION SANDERS				
CONDITION HORN AND BELL				

1.5 Gals./100 miles

CLASS OF WORK	REPAIRS NEEDED

9.1¢/mile

CONDITION OF BRAKES ____ 1ST SHIFT

BRAKE PIPE PRESSURE ____ 1ST SHIFT

REPORT ANY UNUSUAL SOUNDS IN

FIRST SHIFT ____

SECOND SHIFT ____

THIRD SHIFT ____

THE ABOVE WORK HAS BEEN PE

*FOREMAN WILL USE REVERSE

The Fairbanks-Morse fleet works around the clock in the Frisco's West Tulsa Terminal and Madison Street yard for a high utilization of over 550,000 miles in 1950.

4.4% out of service for inspection and maintenance
... 95.6% availability.

FRISCO

5M—2-48—86214

Form MP 58-A Local

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

DIESEL LOCOMOTIVE INSPECTION REPORT—MONTHLY

(Mechanical)

Place TULSA TERMINAL Date Oct Loco. No. 279

CLASS OF WORK	WORK TO BE DONE MONTHLY	Work Performed Sym. No.	Not to Be Performed Foreman to Sign
	Repeat all weekly inspections. Report on weekly form		
	Check valve clearance while engine is hot		

Engine 279 that helped set new standards for economy, utilization and reliability that mean more time on the lead.

	Check hand brake and see that it is working properly		
	Remarks for special items		

The ab

...and when repairs are needed, O-P engine design with 40% fewer moving parts means engine can be serviced... even completely overhauled... far faster for minimum turn-around time.

Fairbanks, Morse & Co.

600 SOUTH MICHIGAN AVENUE

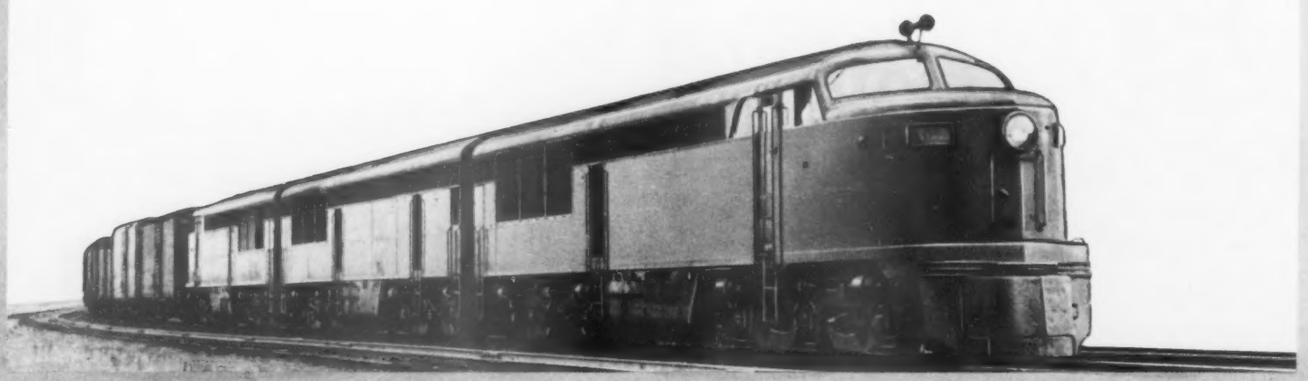
CHICAGO 5

Opposed-Piston Diesel Engine Motive Power

... is the underlying factor responsible for a large part of Fairbanks-Morse locomotive performance.

All locomotives from road passenger and freight to yard switching and transfer units are powered by one of four great O-P engines: 1200, 1600, 2000 and 2400 hp. All offer the basic O-P engine advantages of more power per foot of length, maximum interchangeability of parts, no valves, no cylinder heads -- they have 40% fewer moving parts, and a five million horsepower record of easy, low-cost maintenance.

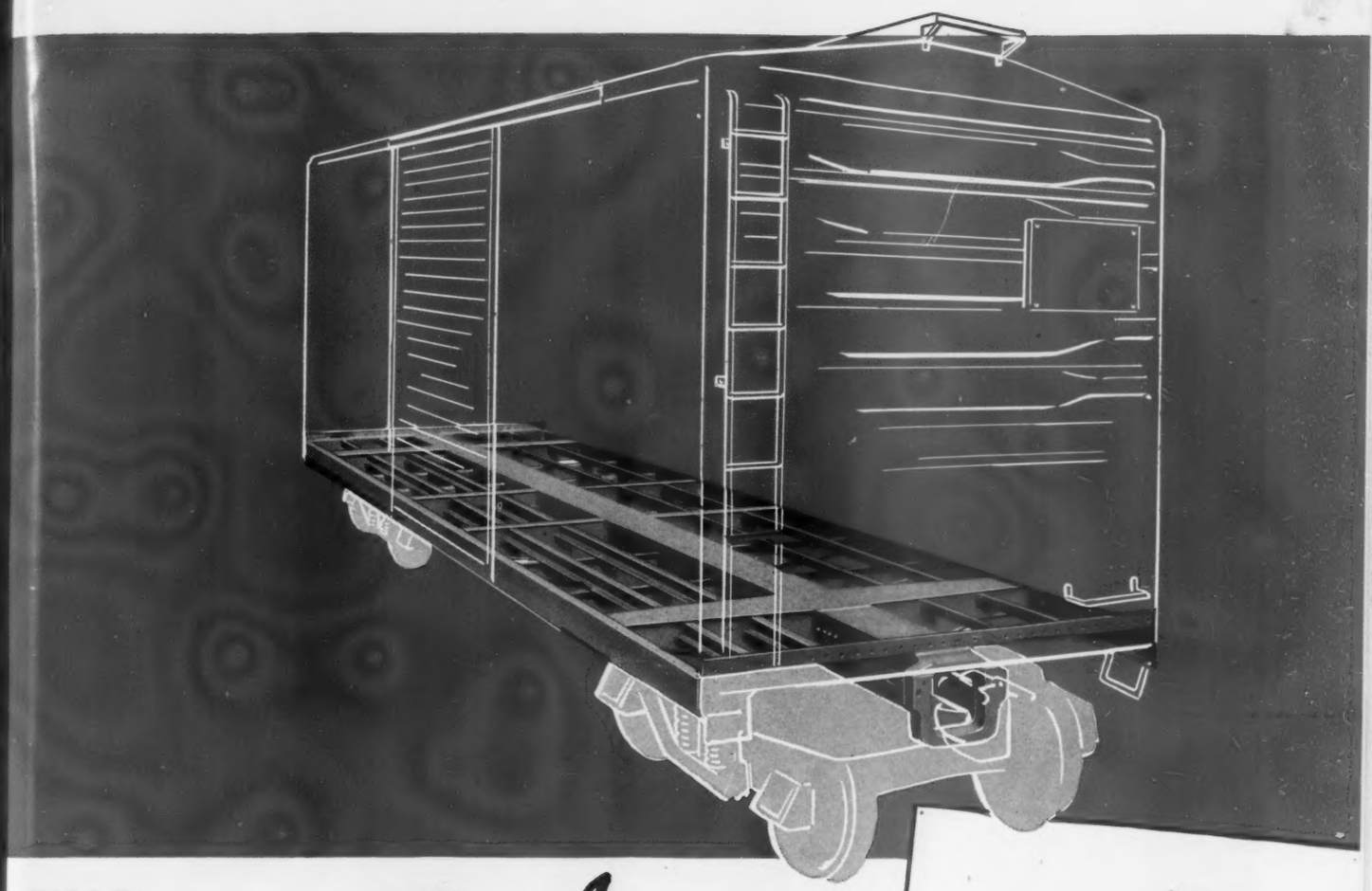
THE GREAT "C" LINE. Powered by any one of three O-P engines ... 1600, 2000 or 2400 hp. ... "C" Line road freight and passenger locomotive units can be combined to make locomotives with ratings from 3200 to 9600 hp. ...78 different types of units using the same superstructure and accessories.



FAIRBANKS-MORSE,

a name worth remembering

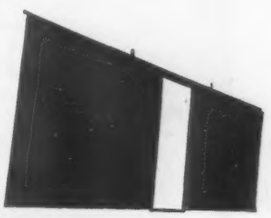
DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • RAIL CARS • FARM MACHINERY • MAGNETOS



THE *International* UNDERFRAME a solid Foundation for *International* SIDES AND DOORS

A much sturdier underframe, incorporating a maximum utilization of material section with minimum weight. All down-hand welded, AAR requirements equalled or surpassed in every feature. Delivered, upon specification, complete with couplers, draft gears, air brake equipment brackets, piping, lever carriers, etc.

International's Bulk-Lading Side Door. Requires no inside grain door . . . and has an access door for loading, inspection and sampling. *Positive retainment on the car structure.*



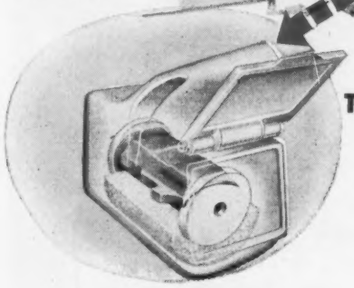
International's ALL-WELDED BOX-CAR SIDES. Delivered *ready to assemble,* to car owners who assemble their own cars. *Maximum welded attachment to the side plate and side sill upper elements.*

INTERNATIONAL STEEL CO. **RAILWAY DIVISION**

Evansville 7, Indiana

THE SOUTHERN SERVES THE SOUTH

ELECTRONIC RAILROADING! In this modern car retarder classification yard of the Southern Railway System, the magic of electronics is setting new records in making up freight trains and speeding them on their way. Using modern facilities and equipment . . . and up-to-date methods and practices . . . our skilled railroaders take pride in keeping your freight "on the go" — when it moves to, from and within the South via **SOUTHERN RAILWAY SYSTEM.**



Their easy maintenance, maximum economy, and dependable performance have made SOLID JOURNAL BEARINGS the Railroads' choice as the bearing standard . . .

As we all know, free interchange is what makes the economical handling of American freight possible. When as high as 8 out of 10 cars in a train belong to other roads than the operating road, there had to be a practical journal bearing answer that would facilitate free interchange.

Time has proved the wisdom of the railroads' decision to standardize on solid journal bearings . . . simple in design, easy to maintain and inspect, performing dependably under extremes of operating conditions.

A lot of resources have gone, and continue to go into making solid bearings that deliver as high as 6½ million bearing miles per set-out!

More Service-Proved FACTS about Solid Journal Bearings

Unmatched Performance—with as high as 6½ Million bearing miles per car setout.

Easiest to Maintain—replacement takes minutes, without need for skilled labor.

Simple in Design—the only answer to unrestricted interchange.

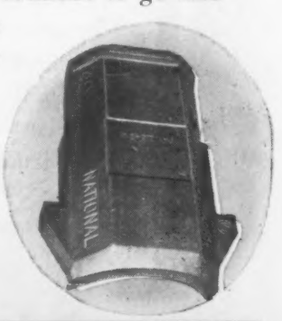
Lowest Cost—save over 25% on car cost; average only $20.00 per car set in replacement.

Most Liberal Tolerances—axles can be used and reused with simple roller burnishing.

Lowest Running Friction—a single film of oil permits faster acceleration, lower running resistance—particularly at low temperatures.

Lightest Weight—up to 60% less dead weight than any other type of bearing.

From coast to coast it's the SOLID BEARING . . . for dependable, economical service.



AMERICAN Brake Shoe COMPANY

NATIONAL BEARING DIVISION

4937 Manchester Avenue • St. Louis 10, Mo.

PLANTS IN: ST. LOUIS, MO. • MEADVILLE, PA. • NILES, OHIO • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.

GOOD NEWS FOR LCL SHIPPERS!

Jersey Central's million-dollar LCL Transfer

The Transfer has two platforms, each 1,000 ft. long and 28 ft. wide, and are connected at one end by a cross platform, 127 ft. by 21 ft. There also is a two-story freight house and office building.

Yes, the BIG Little Railroad has done it again...completed another project to give Jersey Central shippers even finer freight service! This time the big news is Jersey Central's new Elizabethport LCL Transfer—one of the largest, most efficient installations of its kind.

The Elizabethport Transfer saves time, handling, and damage on LCL shipments both to and from the whole Elizabeth-Newark area. The Transfer has 8 tracks with a capacity of 160 freight cars. Modern materials-handling trucks and devices move shipments quickly, safely to the head-end of the Transfer where there is dock-room for 34 trucks. Two great highways—U.S. #1 and the N.J. Turnpike—border the Transfer.

If you would like to know more about our new "million-dollar baby" and how it can make your shipping life easier, we will be pleased to send you an informative folder explaining the Elizabethport Transfer in detail. For your copy, just write: D. Y. Smith, Chief Freight Traffic Officer, Jersey Central Lines, 143 Liberty Street, New York 6, N.Y.

JERSEY CENTRAL LINES

JERSEY CENTRAL LINES

The BIG Little Railroad

How many wheels to run a railroad?

If you could follow these wheels as they move new boxcars out of Northern Pacific's car-building shops at Brainerd, Minn., you'd see why it is said that the wheel is "man's greatest invention."

That wheel the men are pushing, for example, will perform yeoman service. It's an ordinary, cast-iron, work-horse freight wheel—costing $36, weighing 750 pounds. Yet for years it'll roll on, spinning 600 times to the mile for 75,000 miles, shouldering its share of a boxcar's hefty cargo.

These days *all* our 400,000 wheels have their work cut out for them. So do our 25,000 employees along "Main Street of the Northwest." The vast area they serve is experiencing an amazing development.

You can see the Northwest's profound changes as you glide west on the streamlined North Coast Limited. Many of the 608 new industries to settle on "Main Street" in the last five years will flash by your window.

You can sense the area's growth as you tour sparkling new suburbs and expanding cities and towns. One Northwest state has increased its population 40% in a dozen years, another 37%.

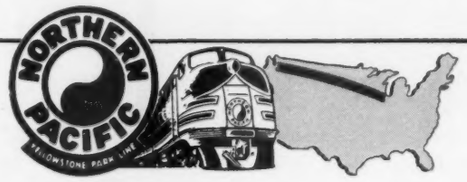
You can picture the bright future of this fabulous country as you inspect huge Columbia and Missouri River projects which are bringing industrial and agricultural growth to an area rich in soil and raw materials.

An area so big and so enterprising needs a railroad reflecting these same qualities. That's the kind of a railroad Northern Pacific is. That's why, when you ship or travel on "Main Street", you'll find Northern Pacific's fine facilities are made to order for you.

NORTHERN PACIFIC RAILWAY

Route of the streamlined North Coast Limited

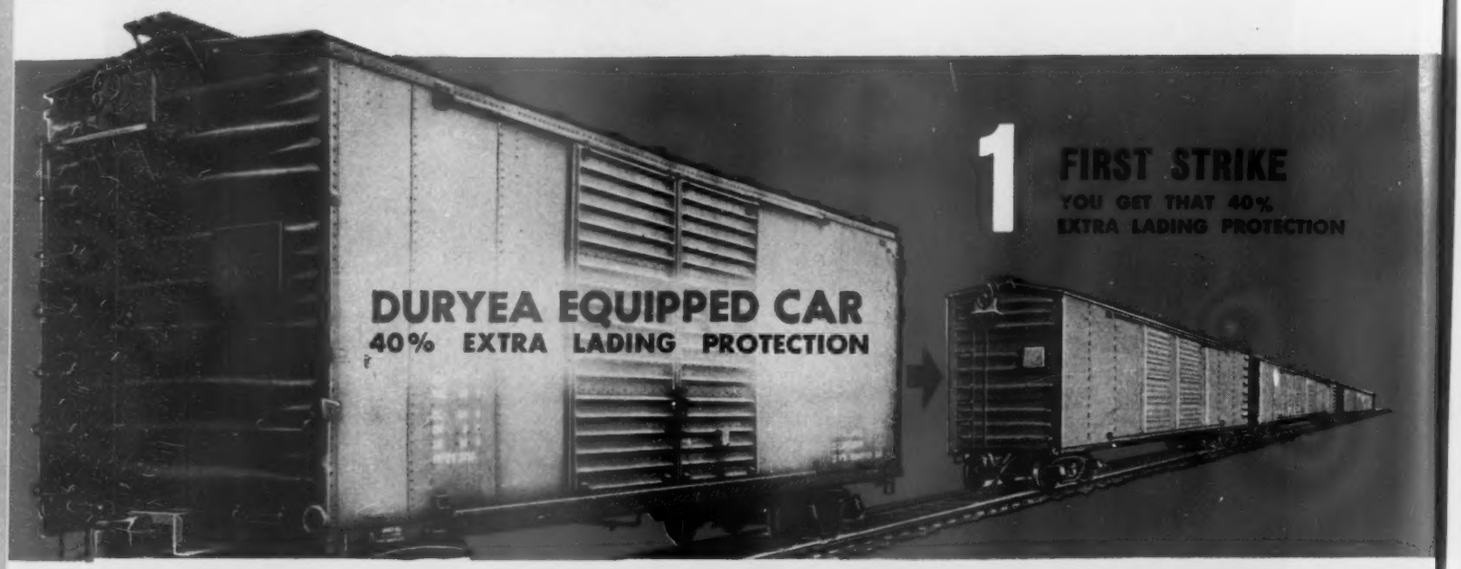
ST. PAUL 1, MINNESOTA



THINGS ARE MOVING ON

Main Street of the Northwest

2 STRIKES AGAINST YOU WHEN YOUR CAR IS HUMPED



In any hump yard, every car is struck twice; first, as a rolling car, when it is coupled with a standing car, and second, as a standing car, when it is struck by the succeeding rolling car. The impacts, more often than not, are at speeds considerably exceeding the acceptable four miles per hour.* When the *rolling* car is Duryea equipped, you get that "40% lading protection." But when the Duryea car is the *struck car*, closure does not occur, even at quite excessive coupling speeds. Here, there is practically no shock transference to car or lading. The protection is complete—100%. The damage potential in this one hump operation is cut in half. Hence, the extra lading protection afforded is actually 80% when your car is Duryea equipped.

To reduce lading damage claims, to increase shipper goodwill, to protect your cars so that they will last longer, be in service more days per year, equip all new cars with Duryea Cushion Underframes. The way today is to specify Duryea.

**According to records of one well regulated yard, as reported in "Railway Age", November 4th, 1950 — 64% of hump yard impacts were at speeds exceeding normal operation.*

FIRST STRIKE

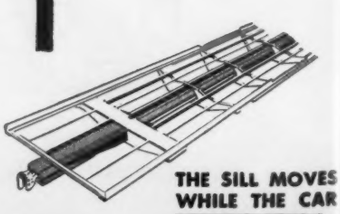
The DURYEA equipped car rolling down the hump strikes to couple with a standing car. The DURYEA 36,000 ft. lb. capacity before closure provides that 40% extra lading protection.

SECOND STRIKE

The DURYEA equipped car is now the struck car but, due to the floating center sill, closure does not occur even under excessive impact and there is slight shock transferring to car or lading. Protection is 100%.

HULSON CO. 332 SOUTH MICHIGAN AVENUE CHICAGO 4, ILLINOIS

duryea cushion underframe



THE SILL MOVES WHILE THE CAR STANDS STILL

DOGMA VS. REASON IN REGULATION OF RAILROAD TRUCKING

Shippers place a good deal of importance on the use of motor trucks by railroads for moving l.c.l. in branch line or local service. Hardly a meeting of any regional shippers advisory board passes without some member either praising a railroad for having initiated or expanded motor truck service—or raising the devil because more roads have not done so. Use of trucks to handle l.c.l. shipments in place of peddler freights is, thus, taken to be the mark of a progressive railroad.

While individual roads continue to make progress in this substitution—as numerous articles in this paper over the past 18 months attest—their will and ability to provide more service of this type are greatly retarded by the attitude of the Interstate Commerce Commission. This body has frozen its thinking about trucking in behalf of railroad companies into a formal doctrine—a kind of religious dogma. Whether a railroad seeks to extend its trucking-in-lieu-of-rail service by securing new certificates or by purchase of, or contract for, an independent trucker's rights, the commission's ruling is the same—namely, that the motor operation be restricted to service fanning in and out of designated "key points" and not between or through those points.

Protective "Iron Curtain"

The I.C.C. insists on key points in order to insure that practically all shipments handled in substitute service move by rail for the major part of the haul. For this reason, it usually is careful to establish key points relatively close together. The only possible outcome of such regulation is to throw an "iron curtain" around the over-the-road trucking industry, protecting it from railroad competition.

If this is its aim, the commission is successful. The key point restriction greatly inflates the cost of trucking services operated in conformity with it, because the number of terminal transfers is increased between trucks and railroad cars and between railroad cars themselves. The restriction necessitates a short-haul type of operation, which is wasteful of equipment and drivers; and it prohibits the flexibility which is an enormous part of the trucks' inherent advantage in all cases. More important for the shipper is the fact that key-pointing limits strictly the range of fast and frequent service—for which the railroads substitute trucking in the first place.

By insisting that the freight be moved by rail to and from a point near its origin or destination, the I.C.C. says, in effect:

Only a Tiny Improvement

"Recognizing that branch and local train service for l.c.l. must, by nature, be slow and infrequent, we will allow the railroads to move the freight in such instances by motor—but only for a short distance. We must allow the shipper only a tiny improvement in the handling of his shipments consigned by rail."

In its constant intervention in opposition to rights for substitute trucking by railroads, the over-the-road trucking industry pleads that it is trying to save itself from a giant which may swallow it up. That same trucking industry boasts in national advertising that it has doubled its tonnage in the past few years and that it is the biggest thing going in transportation. The sharp upward trend in the motor carriers' proportional share of the country's intercity freight since the close of World War II—largely at railroad expense—is too well known to need demonstration.

As for the threat from the railroads *as truckers*, the latest study on the subject shows that, in 1947, the ton-miles carried by motor companies connected in any way with railroads (including those in which there was only indirect stockholder interest) represented only 0.8 per cent of intercity truck traffic. In view of the tremendous growth in long-haul trucking since 1947, while there was but a modest growth in substitute trucking, and actual divestment of some railroad interest in over-the-road trucking not ancillary to railroad operation's, rail-

road-affiliated truck traffic is probably now an even lesser proportion of the whole. Some octopus!

The I.C.C. may rest assured that companies whose officers have grown up as railroaders and who have sunk irrevocably most of their capital in roadway, bridges and tracks are not anxious to scrap their experience and their assets and take to the public highways. Use of trucks for l.c.l. by the railroads is a simple adjustment to the fact that the mass-mover freight train is neither economical nor serviceable for small-lot shipments where volume is low. The railroads' aim is to coordinate road and rail in the best proportions. Their officers may, we think, be trusted to put everything on rails for as long a portion of the haul as is feasible—providing service is as good or better than all-truck.

The real reason why the independent truckers fear expansion of railroad substituted service was explained to us recently by one of their number. He said, in substance:

"Given equal rates and even fairly comparable service, shippers prefer the rails—especially the smaller shippers and those in smaller towns. They like to have at hand an established local agent on whom they can call for authoritative information. They like to deal with an agent—not with a driver who is always in a hurry to get out of town. They don't like to have freight dumped on them in the middle of the night. Things in my territory are at such a state that, if a railroad should tie in a good tight truck operation with fast rail service to breakbulk points, it will capture the business—even at rail rates."

Where does the public interest that the Interstate Commerce Commission is duly bound to protect lie—with improved service to shippers and lower total *costs* (not just charges) for transportation; or with the arbitrary protection of a mythical "little fellow" in the transportation business against an equally mythical colossus?

The trucking industry can keep on saying it isn't responsible for heavy damage that most of us believe they inflict on streets and roads. But the industry would look ridiculous trying to contend that the building of roads and streets that will withstand heavy trucks isn't far more expensive than the construction of thoroughfares that will hold up satisfactorily under passenger cars and something less than boxcars in the way of commercial vehicles.

For passenger cars, lanes 10 feet wide are sufficient. But for trucks as wide as Ohio law allows, which is eight feet, each traffic lane is built to a width of 11 or 12 feet. And that extra width costs money. The average passenger car exerts on the pavement a weight averaging only about one-half ton per axle. State law permits truck weight up to 19,000 pounds per axle, which means that engineers design primary roads to withstand a 20-ton concentrated load. And that costs money, too.

One of the biggest troubles with roads in Ohio—and with city streets that bear heavy truck traffic—is that the thoroughfares were not designed for the loads now being imposed upon them. The trucking industry is indispensable to our economy; but for the privilege of using our roads it should pay its full share of the additional cost of road construction that is necessitated by truck usage.

—*From an editorial in the Cleveland Plain Dealer.*

FORTY YEARS INCREASE IN RAILWAY SAFETY

The recent bestowal of the Harriman Memorial awards for railway safety emphasizes once more the greatness of the achievement of railway management and employees in reducing accidents. The "Safety First" movement on the railways began more than forty years ago. As the statistics of accidents show, it has long since made our railways one of the safest industries in the world; but the efforts to reduce and prevent accidents have never been abated; and they are still rewarded by continuance of gratifying progress.

The worst record of railway accidents ever reported by the Interstate Commerce Commission for any year was for the year ended June 30, 1907, when the total number of persons killed was 11,839. The best record ever reported for any year was for the calendar year 1949, when the total killed was 3,426. This was a reduction in fatalities since 1907 of about 70 per cent; although in 1949 the amount of freight traffic handled was almost twice as large as in 1907 and passenger traffic one-fourth larger.

The statistics given regarding total fatalities are for all persons killed on railway property, including trespassers and those crossing railways on highways. But the railways have only a very limited responsibility to other persons as compared with their responsibility for their employees and passengers. The accompanying statistics show at ten-year intervals the great progress that has been made with respect to (1) total fatalities, (2) number of persons employed for one killed, and (3) number of passengers carried for one killed.

Year	Total fatalities	Number employees for 1 killed	Thousands of passengers carried for 1 killed
1909	8,722	576	3,524
1919	6,978	942	4,529
1929	6,690	1,193	6,903
1939	4,492	1,918	11,391
1949	3,426	2,776	14,987

Accidents usually increase when traffic increases and decline when it declines; and the large increases in traffic since the war in Korea began have been accompanied by some increases in accidents. But the increases in fatalities in the year 1950 and thus far in 1951 have been so small that it can be conservatively stated that both employment and travel by rail have been safer throughout the decade 1941-1951 than they ever were before.

There has been no magic in the achievement of the increase in safety on the railways that has gone on steadily for more than forty years. It has been accomplished by large capital expenditures on improvements, numerous refinements in operating methods, and especially by educational work resulting in ever closer cooperation between managements and employees. There has been much friendly competition among railroads for the Harriman Memorial awards, which have been so much valued that they have exerted an effective influence in promoting safety.

4th Quarter Loadings Seen Up 2.6 Per Cent

Shipper boards predict rise in 21 of 32 commodity groups

Freight car loadings in the fourth quarter of 1951 are expected to be 2.6 per cent above those in the same period in 1950, according to estimates of the 13 regional Shippers Advisory Boards.

On the basis of these estimates, loadings of the 32 principal commodity groups will be 8,244,605 cars in the fourth quarter of 1951, compared with 8,034,778 actual car loadings for the same commodities in the corresponding period last year. Nine of the boards estimate an increase and four a decrease in car loadings for the fourth quarter, compared with the same 1950 period.

The tabulation shows actual car loadings for each district in the fourth quarter of 1950, the estimated loadings for the fourth quarter of 1951, and percentage of increase.

Shippers Advisory Boards	Actual Loadings Fourth Quarter 1950	Estimated Loadings Fourth Quarter 1951	Percent Increase
New England	118,576	123,098	3.8
Atlantic States	830,674	864,098	4.0
Allegheny	974,609	1,003,542	3.0
Ohio Valley	1,025,197	1,011,680	1.3 dec.
Southeast	1,007,386	1,048,658	4.1
Great Lakes	556,310	574,517	3.3
Central Western	333,891	332,794	0.3 dec.
Mid-West	931,351	953,901	2.4
Northwest	608,858	663,166	8.9
Trans-Missouri-Kansas	434,391	418,506	3.7 dec.
Southwest	554,594	565,898	2.0
Pacific Coast	385,023	411,130	6.8
Pacific Northwest	273,918	273,617	0.1 dec.
TOTAL	8,034,778	8,244,605	2.6

The boards expect an increase in the loading of 21 of the commodities listed and a decrease in 11. Among those showing the greatest increase are the following: Citrus fruits, 36.7 percent; cottonseed, soybean—vegetable cake and meal, except oil, 16.5 percent; ore and concentrates, 15.6 percent; frozen foods, fruits and vegetables, 14.6 percent; machinery and boilers, 11.2 percent; agricultural implements and vehicles other than automobiles, 8 percent; gravel, sand and stone, 7.3 percent; iron and steel, 7 percent; chemicals and explosives, 6.5 percent; livestock, 5.1 percent; cotton, 4.8 percent; brick and clay products, 4.4 percent, and salt, 3 percent.

Commodities for which decreases are estimated include: Automobiles and trucks, 34 percent; vehicle parts, 14.3 percent; fresh fruits other than citrus fruits, 6.9 percent; potatoes, 5.5 percent; lime and plaster, 1.1 percent, and lumber and forest products one percent.

Gass Reports Improved Car Situation for August

Increased activity in Class I railroad repair shops in August reduced by 5,000 the number of freight cars held for repairs. Cars given heavy repairs totaled 34,817, the highest since last March, and the number of serviceable cars available was, on September 20, about 34,000 higher than at the same time last year.

Arthur H. Gass, chairman of the Car Service Division of the Association of American Railroads, presented these figures in the latest issue of "The National Transportation Situation," regular publication of the C.S.D.

Commenting on the equipment situation, Mr. Gass noted that new car deliveries to Class I roads in August were only 6,343, but he expressed hope that recent settlement of strikes in carbuilding plants of the Pullman-Standard Car Manufacturing Company "will result in further improvement in the production this month."

Delivery of new cars in August was "barely sufficient" to offset retirements and wipe out the ownership loss which occurred in July, Mr. Gass reported. He said freight car ownership on September 1 was just 1,151 cars greater than on July 1. Compared with September 1 last year car ownership was up almost 17,000 cars.

Otherwise in the equipment picture, Mr. Gass showed that Class I roads on September 1 had 96,020 freight cars awaiting repairs, compared with 113,654 on the same date last year; that these same roads had 126,171 new cars on order compared with 80,937 on September 1, 1950; and that during the 12 months ended with August 31, Class I carriers installed a total of 76,665 new freight cars.

Turning to a discussion of current car supply, the C.S.D. chairman noted that cumulative car loadings through September 8 continued slightly ahead

of last year. Loadings are expected to remain high in the weeks ahead, with movement of late agricultural crops plus the usual peak seasonal demands of industry.

The tight box car situation in the Northwest has eased, Mr. Gass reported. He said the peak of harvest movement there occurred over the Labor Day holiday. Through September 9, under outstanding C.S.D. "quota" orders, roads in the Northwest received 101.2 per cent of the box cars due them, Mr. Gass said.

Better than average crop yields are predicted by the Department of Agriculture, the C.S.D. chairman continued. This will add to the difficulty of eliminating box car shortages before late October. Grain and grain products loadings continue to exceed those of last year, Mr. Gass added. In spite of this there were but 41 blocked elevators September 12, compared to 1,660 a year ago, and grain on the ground was only 10 per cent of what it was last year.

Open top cars remain in moderate to heavy demand, Mr. Gass said. Shortages of hoppers, while only about half what they were last year, are still averaging 4,500 cars per day. Record steel production plus other movements has created shortages of gondolas throughout the country. The supply of flats, both plain and special types, is not sufficient to meet all demands.

One of the major railroad problems this year, according to Mr. Gass, has been transportation of iron ore to build up depleted stocks at steel plants, Chicago and east. Since April 1 all-rail ore shipments in standard equipment have totaled approximately 3.5 million tons. Such movements will continue until about November 15, he indicated.

Coal exports are expected to average about 3 million tons a month for the rest of the year, with the total export movement for 1951 amounting to approximately 30 million tons, Mr. Gass said. This compares with the record export of 41 million tons in 1947. Bituminous coal production, running ahead of 1950 for the first eight months, should be close to 525 million tons for the year, he continued.

On the basis of reports from 730 communities in various shipper-board districts, cars detained beyond the free time of 48 hours averaged 14.54 per cent of those placed in August. This compared with 14.6 per cent the previous month, and 21.65 per cent in August 1950. For the first eight months this year, average detention was 14.69 per cent, compared with 21.38 per cent for the corresponding period last year.

Net ton-miles per serviceable car per day in July was estimated at 955 by Mr. Gass. In the same month last year the figure was 969, and in June this year it was 1,036. Mr. Gass said the low figure for July reflects the effects of the Kansas-Missouri floods, as well as a generally lower level of traffic from slackened industrial activity.

T-M-K Board Asks New Approach to L. C. L. Problem

Commenting on the paradox of steadily shrinking l.c.l. freight volume in the face of markedly improved service — particularly between major terminals — the Trans-Missouri-Kansas Shippers Advisory Board, meeting in Tulsa, Okla., on September 19-20, voted approval of its L.C.L. Committee's report on the need for a new approach to the l.c.l. traffic problem.

Steadily increasing revenue needs of the railroads have necessitated rate increases which have "chased the business away," the committee reported, in recommending that the railroads "give the subject of establishing through routes and rates with reputable common carrier motor lines their immediate attention." The board also approved the committee's recommendation that the subject "be presented for approval" at the forthcoming meeting of the National Association of Shippers Advisory Boards in Cleveland on October 9, 10 and 11.

Speaking before the joint luncheon sponsored by the Tulsa Chamber of Commerce and the Traffic Club of Tulsa, Earl B. Smith, vice-president and director of traffic of General Mills, Inc., called for greater shipper and public interest in the needs of the railroads for new capital to finance further necessary improvements and

NEW SERVICES AND PUBLICATIONS OF INTEREST TO SHIPPERS

AT ST. LOUIS, MO.—L.C.L. interchange traffic among the 18 roads entering this area now is being handled by the Ben Gutman Truck Service, Inc., following cancellation of its contract by Columbia Terminals, Inc.

ATCHISON, TOPEKA & SANTA FE—*"Merchandise Service" circular.*

CHICAGO & NORTH WESTERN—Feeding of cattle in transit privileges have been extended and now apply, in some cases, east of the Missouri river on connecting lines, if shipment originates on the C. & N. W.'s lines in Wyoming, Nebraska and South Dakota.

DULUTH, MISSABE & IRON RANGE — *General freight department circular No. 5-1951 on D. M. & I. R. l.c.l. service.*

LITCHFIELD & MADISON—This road has opened two new traffic offices: Appleton, Wis., Room 208, Irving Zuelke building, telephone Appleton 4-1553, R. M. Hurst, general agent; and Pittsburgh, Pa., Room 2806, Koppers building, telephone Court 1-5729, C. P. Brown, general agent.

LOUISVILLE & NASHVILLE—*The industrial development department recently issued a number of revised pages in its "List of Buildings Suitable for Industrial Purposes Available on the Louisville & Nashville Railroad."*

NEW YORK CENTRAL—Changes in package car schedules:

Car lines cancelled:

Gibson Transfer, Ind., to Danville Ill., and St. Louis (S. L.-S. F.); Indianapolis, Ind., to Ansonia, Ohio; Rochester, N. Y., to Hartford, Conn. (N. Y. N. H. & H.); Utica, N. Y., to Burr Oak, Ill. (C. R. I. & P.); Cleveland, Ohio, to Galewood, Ill. (C. M. St. P. & P.); and New York (33rd St.) to Charleston, W. Va., Springfield, Ohio, and Boston, Mass.

New car lines:

New York (Westchester Ave.) to New York (33rd St.) ("Pacemaker"); Kingsbridge, N. Y., to New York (33rd St.) ("Pacemaker") and Philadelphia (P. R. R.); Utica, N. Y., to Kansas City, Mo. (C. R. I. & P.); and Cleveland to Milwaukee (C. M. St. P. & P.).

The N.Y.C. also has announced that it will rearrange yards at Detroit; Elkhart, Ind., and Hammond; McKee's Rocks, Pa. (P. & L. E.); and Syracuse, N. Y. Rearrangement and enlarging car capacityl at the yards, costing "several millions of dollars" will give better service to patrons.

SOUTHERN—*Spending about $1.1 million for improving several facilities for providing better service. Chief project is for increasing capacity of John Sevier yard at Knoxville, Tenn.*

expansion. The best way for the railroads to raise new capital, Mr. Smith pointed out, would be through issuance of stock, except that the investing public is totally disinterested in such securities at the present time because of "inadequate and erratic earnings" and because of "court and Interstate Commerce Commission handling of reorganization proceedings." Mr. Smith cited these as "symptoms of the continuance of certain unsound governmental policies."

In the past five years the railroads generally have "improved their operating efficiency, reduced their funded indebtedness, and undertaken vast improvement programs," Mr. Smith continued, "even at the cost of a moderate increase in their total indebtedness — but it will be impossible for them to proceed in this manner indefinitely. Railroads are essential, both in war and peace, and must continue to spend large sums if they are to maintain their facilities at the high standards necessary to provide the country with adequate railroad transportation."

If the railroads are to be in a position to continue necessary improvements and expansion, Mr. Smith emphasized, they must have adequate and reasonably regular earnings. A remedial program designed to achieve this end must have "as its starting effort modification of governmental policies that effect the railroads adversely," he concluded. Such action would work "toward a more secure position for all transport agencies to continue in private ownership and operation."

L. W. Witte, traffic manager of the Mid-Continental Petroleum Corporation, was appointed general secretary of the board, succeeding E. E. Kohlives, resigned because of change of duties.

J. J. Mahoney, general superintendent transportation of the Santa Fe, and O. W. Limestall, general superintendent transportation of the Rock Island, speaking on behalf of all railroads in board territory, thanked shippers for their patience and friendly cooperation in handling difficult transportation problems during and after the recent Kansas floods.

Following the regular meeting of the Trans-Missouri-Kansas Shippers Advisory Board in Tulsa, Okla., September 19 and 20, representatives of the board were guests of the Tulsa Chamber of Commerce on its regular weekly half-hour television program. The program was an informal discussion of the function of shippers advisory boards, with W. W. Klingensmith, manager of traffic and transportation of the Tulsa Chamber of Commerce, acting as moderator. The discussion covered the local, as well as the national, importance of the work done by the T-M-K Board. From left to right in the panel are: Mr. Klingensmith; G. W. Thompson, general chairman of the T-M-K Board and general traffic manager of the Missouri Portland Cement Company of St. Louis; R. E. Clark, manager of the Closed Car Section of the Car Service Division of the Association of American Railroads; L. W. Witte, newly appointed general secretary of the T-M-K Board, and traffic manager of the Mid-Continent Petroleum Company of Tulsa; and O. W. Limestall, general superintendent transportation of the Rock Island

60 Motor Carriers Seek To Haul Explosives

On September 17 the Interstate Commerce Commission began a series of hearings in Chicago in connection with applications from 60 carriers (mostly common carriers) who seek permission to transport explosives. Witnesses from the Department of Defense representing the Army, the Navy and the Air Force have appeared before Examiner B. E. Stillwell, who is conducting the hearings, testifying that the faster service offered by trucks in many instances is expedient to defense needs. This support of the applicants plea on a general basis (the Department's witnesses were careful to avoid specific support of any particular applicant) will probably be the greatest "weight" with which the opposition will have to contend.

In addition to the eastern and western railroads opposing the application, representatives of the Brotherhood of Locomotive Engineers and the Brotherhood of Railroad Trainmen have filed petitions to intervene as has the American Automobile Association.

Cover the Country

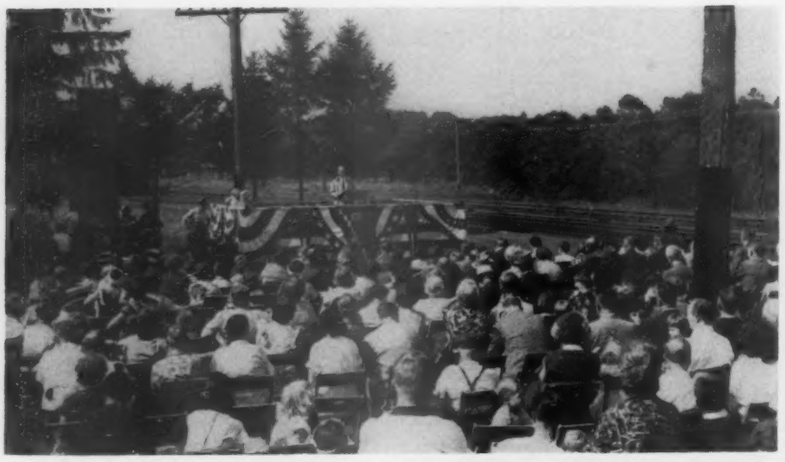
At the opening hearing the Commission announced that it would hear the application of Riss & Co., (a Kansas City trucking firm) first and then consolidate all of the remaining applications in a single hearing. Collectively, these applications cover almost every principal city and almost every major highway in the 48 states and the District of Columbia.

If certificates of convenience and necessity were granted to the applicants, the certificates would have the force and effect of a franchise and would be permanent in character, a representative of the western roads told *Railway Age*. He added that although the carriers might only have a limited number of suitable units for explosives transport at the time of the application, the certificates would not, nor could the Commission itself, limit the number of such vehicles which might subsequently be placed in service. He said also that although the truckers plea was expected to be based largely on the "emergency" character of the Defense Department's needs, there would be nothing to prevent the applicants from also entering the field of commercial explosives haulage.

The hearings have been adjourned until October 29 in order to give both sides further time to prepare their cases. At the opening hearing, the railroads sought a 30 to 60-day continuance in order to formulate their plans and on September 21, the truckers counsel decided to withhold the remaining portion of the Riss testimony until the carriers, the Brotherhoods and the A.A.A. were prepared. Examiner Stillwell thereupon set the October 29 date for resumption of he hearings.

Railroad Representatives

The railroads opposing the application are being represented by Joseph M. Hays, counsel, and James W. Nisbet, attorney, Association of Western Railways and by F. X. Masterson, manager, Motor Carrier Bureau, Traffic Executives Association Eastern Railroads. The two operating Brotherhoods have stated their interest in the case because of the hazard to their members resulting from grade crossing accidents as well as from the standpoint of general public safety. The A. A. A. has stated its concern for the safety of the nation's motor car owners who would be subjected to additional highway hazards if the trucks were granted authority to haul the explosives. The initial hearings were conducted in a meeting room of the Palmer House, but the large attendance (estimated to be over 100) made it neces-



Mr. Palmer opens the ceremonies on the Harriman station grounds. At the left is the stone monument erected some years ago to commemorate the first telegraphic train order, sent from Harriman to Goshen and from there to Port Jervis by Charles Minot, who at that time was general superintendent of the New York & Erie, predecessor of the present Erie

Messrs. Marshall, Coy, Starr and Johnston, in the usual order, at a special telegraph key set up in front of the message display in Harriman station

Allen Starr, of Ramsey, N. J., 101-year-old ex-telegrapher on the Atlantic & Great Western (now part of the Erie), was guest of honor. Just under his right arm, as he points to an enlarged display of some of the messages received from various railroads, is a facsimile of the special illustrated telegram sent by model railroad enthusiast Walt Disney

sary to transfer them to the Morris Room of the Central Territory Railroads at 22 W. Madison St. The matter has been designated as MC-200, sub No. 84, Riss & Co., Inc.

Celebrate Centennial of Telegraphic Train Orders

The 100th anniversary of the world's first telegraphed train order was celebrated at Harriman, N. Y., on September 21. The official party, which traveled to Harriman from Jersey City in a special train provided by the Erie, included officers of the Erie; of the Association of American Railroads, of the Western Union Telegraph Company, and of other communications companies; representatives of the Morse Telegraph Club of America, of the Order of Railroad Telegraphers and of the American Train Dispatchers Association; and members of the press.

The ceremonies were highlighted by receipt of congratulatory messages from presidents of some 75 American and Canadian railroads. Most of these were sent over Western Union's "Telefax" system for transmission of exact facsimiles of original messages, but Clark Hungerford and H. W. Stanley, presidents, respectively, of the St. Louis-San Francisco and the Tennessee Central, sent theirs personally. The message from A. T. Mercier, president of the Southern Pacific, was wired by J. W. Corbett, vice-president of the S.P.; while that from H. K. Norton, trustee of the New York, Susquehanna & Western, was transmitted by the Susquehanna's oldest train dispatcher, John P. Duffy. Personal messages were also received from various chapters of the Morse Club, an association of former telegraphers.

Speakers for the occasion included Wayne Coy, chairman of the Federal Communications Commission; Walter P. Marshall, president of Western Union; and Paul W. Johnston, president of the Erie. George E. Palmer, president of the Morse Club's New York chapter, was master of ceremonies. A visit to nearby Arden House, former home of the late E. H. Harriman, and now Arden Campus of Columbus University, concluded the day's program.

Tariff Research Group Seeks Views of N.I.T.L.

The Railroad's Tariff Research Group is asking members of the National Industrial Traffic League for advice as to whether shippers prefer the loose-leaf or the supplement type of tariff, and as to the extent to which tariff routing provisions and maximum circuity limitations are burdensome to shippers. The Research Group, of which Charles S. Baxter is chairman, was established recently by the railroads.

Its questionnaire with respect to types of tariffs and routing provisions has been distributed to N.I.T. League members by Executive Secretary Edward F. Lacey. In an accompanying circular, Mr. Lacey said that the Research Group, from time to time, will seek "samplings of shipper sentiment, practices and experiences which those using freight tariffs are in position to furnish."

As to the question with resspect to routing provisions, Mr. Lacey explained that the query sought to find out, for example, whether most shippers "circumvent the processes of

checking out detailed routing or circuity tables by choosing for the bill of lading a usual or normal route and then protect themselves against a rate penalty for misrouting by inserting the through rate in the bill of lading."

Information respecting the latter question, Mr. Lacey added, "is desired particularly from actual shippers of freight," since the Research Group "desires data as to actual routing practices, rather than an expression of sentiment or personal opinion."

Subsidies to Competitors Hurt Public and RRs

Subsidies to competing forms of transportation are depriving the public of railroad service better even than today's by draining off revenues which railroads need for additional improvements, Gustav Metzman, president of the New York Central, said in Watertown, N. Y., on September 24.

Speaking at a dinner arranged by the Watertown Chamber of Commerce to celebrate the 100th anniversary of operation of the Rome, Watertown & Ogdensburg, which became part of the Central system in 1891, Mr. Metzman said:

"We can provide this service and provide it at relatively low cost, if an aroused public demand forces elimination of subsidies to competitive forms of transportation and forces each type of transportation to assess charges in accordance with their true costs. It is you citizens, you business men, who carry the risk and eventually will pay the penalty unless every form of transportation is required to stand on its own feet. And it is you who will be the first to benefit from adoption of such a policy, through low-cost rates, better service and the insurance of dependable transportation."

Other transportation services, he added, sometimes may offer apparent but deceptive low rates for special services, "but when the chips are down, railroads are the essential transportation medium, as you all know as well or better than I." Mr. Metzman said the only real hope of obtaining the lowest possible railroad rates over the long term lies in bringing about the lowest possible unit cost of performing rail transportation. "This hope cannot be realized if a substantial amount of traffic is to be artificially diverted from the railroads to other forms of transportation by governmental subsidies and other government practices designed to favor the competitors of railroads."

Pooling Plan Approved

Division 3 of the Interstate Commerce Commission has approved a five-railroad pooling arrangement which contemplates continued operation of daily through l.c.l. service from New York and Philadelphia to Macon, Ga. At the same time, the division found that operations under the pooling plan since July 1, 1949, have been "without specific approval and authorization of the commission in violation of section 5(1) of the act."

Parties to the arrangement are the Pennsylvania, the Richmond, Fredericksburg & Potomac, the Atlantic Coast Line, the Seaboard Air Line, and the Central of Georgia. The Southern was a protestant in the case, which was docketed as No. 30754.

Emergency Board Report

An emergency board has reported to President Truman on an investigation of a dispute between the Denver & Rio Grande Western and its engineers, who are represented by the Brotherhood of Locomotive Engineers. The dispute involved the brotherhood's demand for changes in two working rules; and the board recommended that the demand be met in one case and rejected in the other.

On the basis of the recommendations, the B. of L.E. would get a revision of the mileage-limitations rule, which fixes maximum and minimum monthly mileage totals for engineers. The recommended change, the report said, would bring the rule's provisions into line with those of the "standard" mileage-limitations rule in effect on most roads.

The demand which the board would reject called for a change in the promotion rule, which now stipulates that a fireman acquires seniority as an engineer immediately upon qualifying for promotion to that service. The B. of L.E. wanted a rule which would give the promoted fireman a seniority date as an engineer only upon his performing service as such.

Members of the board were Chairman Frank P. Douglass, Robert G. Simmons, and Frank M. Swacker.

No Truman Action Follows Discussion of Wage Case

No White House action on the stalemated railroad wage and rules cases resulted from the September 20 call which a group of senators made on President Truman for the purpose of discussing the matter with him. The stalemated cases involve disputes between the railroads and those of their employees who are represented by the Order of Railway Conductors, Brotherhood of Locomotive Engineers, and Brotherhood of Locomotive Firemen & Enginemen.

The senatorial group which called upon President Truman was headed by the chairman of the Committee on Labor and Public Welfare—Senator Murray, Democrat of Montana (*Railway Age* of September 24, page 67). They said, upon leaving the White House, that they did not recommend any course of Presidential action, but their report brought Mr. Truman up to date on the situation.

RRs SHOULD BE FREE TO RAISE RATES WITH COSTS—FARICY

"Everybody knows by this time that the rate increase the Interstate Commerce Commission granted the railroads recently was wholly inadequate," William T. Faricy, president of the Association of American Railroads, said in Chicago on September 19. Addressing the annual meeting of the Locomotive Maintenance Officers' Association, which presented him with an honorary life membership, Mr. Faricy added: "The increase asked was 15 per cent; they granted 9 per cent in the east, 6 per cent in the west, 6 per cent in the south."

Figures on which railroads rested their case, the A.A.R. president said, show that since 1939, the year the recent war started in Europe, railroad wage rates have gone up 140 per cent and the cost of materials purchased by railroads has increased approximately 131 per cent, while railroad revenues—in terms of revenue per ton-mile—are estimated to be no more than 45 per cent higher, including the latest (Ex Parte 175) increase. This disparity between income and outlay is too big a gap to be completely bridged, he emphasized.

"A lot of it can be bridged, has been bridged by increasing efficiency," Mr. Faricy continued, "but it is the national policy, as written into the Defense Production Act, through the so-called Capehart amendment, that businesses generally are allowed to increase their prices by increases that have taken place in wages and materials. We in the railroad industry feel that although we are not subject to Office of Price Stabilization regulations, but, instead, are under the I.C.C., that this same principle should be applied to railroads. It is difficult for us to see why we, alone, should be singled out and told that we may not raise our prices by the amounts that our costs have gone up."

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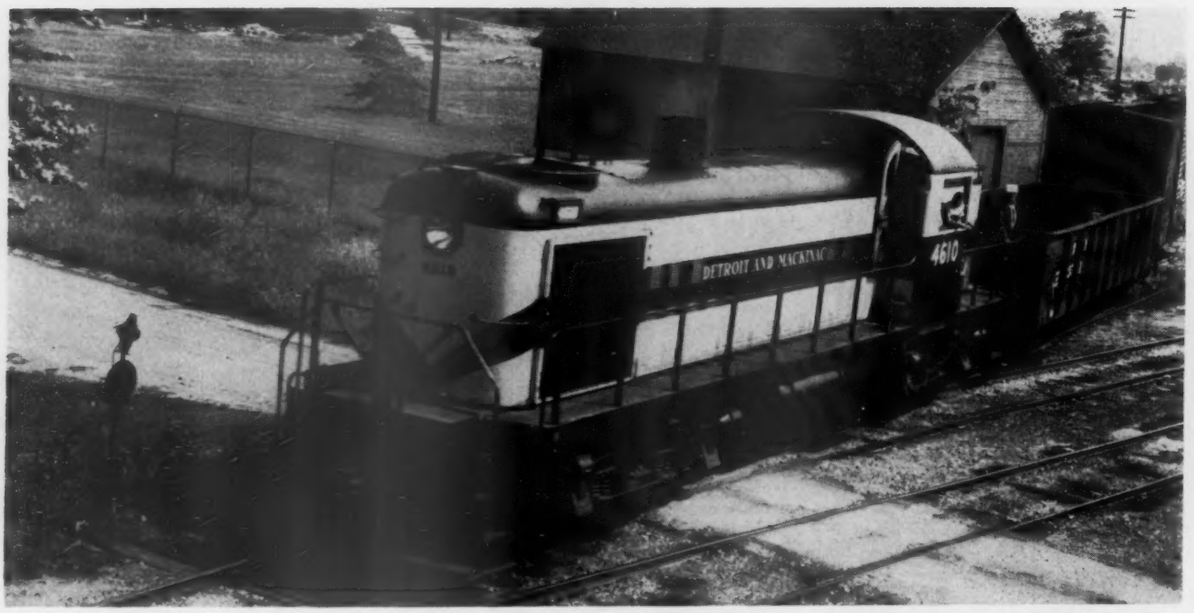


Short line railroads were the first in the country to go all-diesel. The 234-mile Detroit & Mackinac is a Class I railway, but has the character and problems of a short line

The "Short Lines" . . .

"Dirty Work" Done with

Fighting the battles of the short and terminal lines for more than 15 years, as president of their association, has made J. M. Hood the accepted spokesman for an important segment of the railroad business. His program of action has attracted a growing number of Class I roads to take membership in his association along with the A.A.R.

Terminal and feeder lines perform burdensome chores of railroading, through close touch with customers and an effective association

Local gathering and distribution of freight at the outlying stretches of the railroad net and the performance of switching and terminal transportation are, in these days of distorted unit costs, held to be the most onerous and least remunerative tasks in the railroad business. While, of course, the trunk line railroad companies perform these chores themselves on thousands of miles of owned branch lines of light traffic and in terminals which are integral parts of their systems, at many points in the country these services are carried out by so-called short lines and by separate switching and terminal companies.

On a short line, everybody is a freight agent, for as Essayist Archie Robertson once declared, "For a little, local railroad it's root, hog—or die!" While few short lines have access to traffic with which to utilize their plants as fully as most bigger roads, a large number of them probably develop more actual traffic, in relation to their *potential* tonnage, than do the trunk lines. They dig deeper; they have closer relations with local businesses; and, in lots of cases, they provide more frequent or more convenient service. One reason why they may be able to provide better service is because their employees are closer to the firing line; recognize a personal stake in the road's survival; and are less stubborn about insisting on the kind of working contracts which often make good service on thin-traffic lines impossible, or prohibitive in cost, for the big roads. But beyond this, good service is frequently a matter of more intimate acquaintance with the needs of shippers and receivers in light-traffic territory.

Take, for example, the case of a prosperous, medium-sized city in a Midwest dairy section. Chiefly on the basis of rates, all of the creameries in the city and vicinity have discontinued shipping dairy products by rail, even to distant points, except one large plant, which happens to be located on a locally owned, though independent, electric freight road. This customer still uses railroad service predominantly. The traffic officers of the

The diesel has meant more, proportionately, to the short lines than to the larger systems, because of its versatility and ease of maintenance

the Personal Touch

neighboring trunk lines have never been able to duplicate the formula that enables this small outfit to hold the business. Meanwhile they enjoy the long haul on the dairy products it originates for them. The fact that the president of the short line works indefatigably for industry and agriculture in the local area may have a lot to do with his peculiar success. He promoted a stock show, for example, which has created a brand-new role for the city as a center for fattening cattle and hogs.

For unusual traffic development, no better example exists than the little Unadilla Valley railroad, in New York, which Fortune magazine featured a decade ago. Among other "personal" service rendered local inhabitants by the road's employees were (1) tracing a lost package sent by express between points not local to the railroad at all, by relatives of a "friend"; (2) a loan of new ties to a farmer to use temporarily as cribbing for an addition to his henhouse; and (3) successful effort to interest the Park Commission of New York City in buying the droppings of local hens to fertilize city-bred plants and grass.

The fact that the short lines use extraordinary and persistent means to win local friendship is not an indication particularly of superior intelligence and vigor, but is more the result of neighborhood status. A large trunk line railroad cannot show undue zeal in building up just one community among hundreds or even thousands along its lines. It has to promote its entire territory in general. The short line railroad officer who can, without criticism, interest himself in a single community, frequently is able to do a more thorough job for that community than can the industrial development or traffic departments of a 5,000-mile system.

Since they must "root, hog, or die," the short lines exhibit extraordinary ingenuity in holding down expenses, as well as in attracting traffic. During the Twenties, for example, when passenger traffic was in its last gasp on the local roads, their mechanical staffs exercised the most exceptional inventiveness in adapting the products of the automotive field to small-unit, self-propelled vehicles on the rails, in a well-fought, though futile, battle to keep passenger business on at least a break-even basis. The short lines were pioneers in the use of off-track equipment for roadway maintenance. They moved into substitution of trucks and buses on the highways for train passenger and l.c.l. service faster, generally, than did the Class I roads. Today they are demonstrating a remarkable aptitude in adapting diesels to rough terrain and light rail and in keeping those relatively complicated pieces of machinery well maintained with one- or two-man shop forces and minimum inventories of parts.

More than 15 years ago, the then federal coordinator of transportation issued a number of studies which had the stated purpose of "helping the railroads help themselves" in their depression problems. Joseph B. Eastman's foreword to a report on short line railroads was far less confident about the ability of his office to help the little railroads than he was in the case of the Class I carriers. He wrote:

"It is to be doubted whether the report will be of very material help to the short lines, for the character of their problems proved to be such that no very concrete suggestions can be offered for the improvement of their conditions, except along lines which have been and are being followed. *The short lines are effectively organized, and their necessities are such that there is not much that they have overlooked that would be of help to them.*"

Since 1911, the Interstate Commerce Commission has classified railway operating companies on the basis of annual operating revenues; those of Class I having revenues above $1 million; Class II above $100,000 up to

Left—Some members of the short line group maintain their plants at the highest standards attained by the trunk lines and haul heavy freight and passenger traffic, like the 77-mile Chicago South Shore & South Bend

Facing page — The picturesque "mixed train daily except Sunday"—like this on the little Smoky Mountain—is fast passing from the scene

$1 million; and Class III below $100,000. The companies, however, are not reclassified every year, and may and do remain in the same class, despite a shift in revenues to that of another class, until a permanent change in the relative status of the road is apparent. Naturally, progressive inflation in the price level has tended to put in the category of Class I roads a number of companies which formerly belonged in Class II, and without any real change in their relative status in the industry or their character as "short lines."

The short lines bulk larger in terms of tonnage handled than they do in the plant they operate. Taking all line-haul railways as a whole, Class II and III roads accounted, in 1949, for almost 5 per cent of revenue tons of freight originated, and for more than 5 per cent of tonnage carried, although they operated only 4.6 per cent of the total mileage, owned 2 per cent of the locomotive units, and had 1.3 per cent of the employees. Their average revenue per ton-mile was higher than that of Class I lines—3.7 cents for Class II and 7.7 cents for Class III, compared with 1.3 cents for Class I. But, because their haul was short, average revenue received per ton (from which they had to absorb terminal handling costs) was much lower—89 cents for Class II and 63 cents for Class III, compared with $3.06 for Class I lines. (The short lines do not report their average haul.)

The Class II and III lines are not only small, in terms of total revenues, but must survive with far less density of traffic, generally, than their Class I neighbors. Revenue freight hauled over the average mile of road on the average day on Class II roads was only 800 ton-miles in 1949, and on Class III lines only 204 ton-miles; while the comparable figure for Class I roads was 6,814. The short lines were unable or unwilling to keep their train service in proportion to their density of traffic: Train-miles per mile of road per day was 2.7 on Class II, and 1.8 on Class III roads, compared with 6.0 on Class I lines.

The switching and terminal lines cannot, of course, be measured in the same way, since their performance is computed in terms of cars handled. Some of the S. & T. roads earn enough revenue to rank as Class I carriers. But all of them have interests and problems akin to that of the line-haul short lines, despite the fact, that, in general, they are more profitable. S. & T. roads, of all classes, enjoyed operating revenues of more than $204 million in 1949, compared with $8.6 *billion* for Class I, $15 million for all of Class II, and $15 million for all of Class III line-haul companies. In proportion to their revenues, the S. & T. companies bore the lowest expenses of any class of railway. Their operating expense ratio was 72.7 per cent in 1949, compared with 80.0 per cent for Class I roads. Even the short line-haul roads did better than the latter in this connection, with ratios of 75.8 and 76.7 for the Class II and Class III lines, respectively. The S. & T. companies were likewise the most successful in carrying revenues through to net. Their ratio of net income to operating revenues in 1949 was 10.7 compared with only 5.1 per cent for Class I, 3.9 for Class II, and 6.1 for Class III line-haul carriers. Their stockholders fared relatively better, receiving 3.2 per cent of total revenues in dividends, while the owners of the Class I roads got only 0.6 per cent. The owners of the short line-haul roads prospered even more than the S. & T. companies. Class II and III roads in the aggregate paid out 5.2 and 5.1 per cent of total revenues, respectively, in dividends.

Physical Characteristics

A large part of the mileage of Class II and III railroads and switching and terminal companies was built during the first two decades of the present century, in contrast to the Class I roads, the bulk of the route-mileage of which dates back to the 19th century. This reflects the fact that many of the short lines were constructed to exploit natural resources, as new regions opened up, or to serve as extensions of the rail net as rural regions expanded in population and began to attract industrial activity. Answers to a questionnaire by the federal coordinator indicate that slightly more than half of the Class II and III line-haul mileage in operation in 1933 had been constructed primarily to serve the general public. The remainder was designed for specific commodities and businesses—principally lumber and coal.

In the most recent complete analysis of Class II and III roads, made by the federal coordinator about 15 years ago, it was found that fewer than 15 per cent of the companies' properties traversed level terrain over the entire distance between terminals. Furthermore, many short lines serve extractive industries, like mines and quarries, which are generally situated so as to make easy railroading impossible, however great the expenditure. More than 70 per cent of the Class II roads, and 77 per cent of the Class III, reported maximum grades, against preponderant traffic, of more than one per cent. Of a total of 102 roads (line-haul) which were contacted, 46, operating 9 per cent of the mileage, had to contend with grades against major traffic flow as high

Right — A large portion of recent capital improvements by short lines has been for diesel servicing facilities — either new buildings or adaptations of former steam enginehouses

as 3½ per cent, and 30, with 7 per cent of the mileage, had grades of more than 3½ per cent.

Switching and terminal companies, as might be expected, presented much less severe characteristics—less than 40 per cent had grades of over one per cent. More than 90 per cent of their mileage represented had maximum grades of less than two per cent. Maximum curvature on the lines of the great majority of both line-haul short lines and S. & T. companies was more than 7 deg., and, on a considerable proportion of roads, the maximum curvature ran over 15 deg.

Dieselization

The coming of the diesel locomotive has probably been of greater benefit to the short and terminal lines, proportionately, than to the Class I road-haul companies. Its versatility has enabled them to get along with fewer types of locomotives. Its better distribution of weight and force on the rail has enabled them to haul heavier loads, without having to use heavier rail or strengthen bridges and trestles. Its ease of maintenance and of parts replacement has saved them more, relatively, in money and manpower than the better shopped and staffed trunk lines. Many a short line used to dread the coming of the I. C. C. locomotive inspector, because he might order the only serviceable steam locomotive out of service until expensive repairs could be made. "Now, with diesels, we just talk about the weather."

Unfortunately, no statistics are available on the proportion of work done (measured in train-miles or gross ton-miles) by diesels on Class II and III roads such as are recorded for the bigger lines. In terms of locomotive units in service, the smaller roads show a greater, or at least equal, proportion of "internal combustion" locomotives (including straight-drive diesel, gasoline and gasoline-electric) to total motive power, compared with the Class I line-haul companies. Taking 1949 figures (latest complete record made public), the ratio of "internal combustion" locomotive *units* to total locomotives in service was as follows:

Class I line-haul: 27%
Class II line-haul: 29%
Class III line-haul: 26%
Switching & Terminal: 54%

Many short lines became interested in internal combustion power in the early Twenties, with the development of gasoline-driven rail cars having a straight or electric drive. Thus their dependence on non-steam propulsion was greater and earlier than was the case with the trunk lines generally. Two short lines—the Midland Continental and the now-defunct Missouri Southern—successfully used diesel locomotives for road service as long ago as 1933.

Statistics of improvements by the Class II and III roads are neither up-to-date nor complete. But even a sample indication is useful in suggesting the projects for which these lines are spending their hard-to-get and usually scanty funds. Much of the improvement funds of the short lines went for new or second-hand locomotives, but sizable sums were spent on fixed plant. In October 1950, some 36 true short lines and small terminal lines reported their capital expenditures on fixed plant to *Railway Age*. A total of 25 of these lines reported actual expenditures totalling $2,069,557 in 1949. A total of 27 of them estimated that their 1950 fixed plant improvement outlays would come to a total of $1,839,481.

Of this 1950 total, additions and improvements to yards and terminals amounted to $829,179; new or improved diesel facilities came to $276,001; and new industrial tracks to $221,137.

Additions and betterments (including rolling stock) on Class II roads in 1949 totaled somewhat more than $1,000 for each mile of road. While this outlay is considerably less than the more than $6,000 spent in improvements by the Class I roads per mile of road operated, in relation to traffic density (cited above), it is much greater. Additions and betterments for Class III roads are not reported.

The Short Line Association

Short lines and terminal roads have long supported their own association, called the American Short Line Railroad Association. With its headquarters in Washington, D. C., and regional offices at Chicago and Atlanta, respectively, this organization performs for the little roads many things they cannot do for themselves.

Among its chores is that of representing their particular point of view before the commission and in inter-road negotiations when their interests are at variance with those of the trunk lines. For this and other reasons, a total of 73 Class I roads are among the 314 companies which are currently members. Some of these Class I properties are major railroads—like the Denver & Rio Grande Western, Delaware & Hudson, Chicago & Eastern Illinois, Monon, Long Island, Minneapolis & St. Louis and Union railroad—and earn annual revenues of $20 million or more. They are members in the short line group, in addition to the Association of American Railroads, because they face some of the problems of the short line or because the short line association takes a stand on controversial matters with which they agree.

Some of the important services rendered by the A.S.L.R.R.A.—at no extra cost beyond normal dues and assessments—are:

(1) Acts as statutory agent at Washington, upon whom I.C.C. may serve its notices.

(2) Renders direct, individual assistance to members in satisfying requirements of reports and orders of the I.C.C. and state commissions; helps them prepare rate and service cases.

(3) Informs members fully about rate, tariff and classification changes and rules, regulations and orders of government bodies.

(4) Gives help to roads in getting priorities for steel and other scarce items. Nowadays, Secretary C. E. Huntley spends "almost all his time" in this work.

(5) Administers group excess public liability insurance, available to members at a cost believed to be below coverage obtainable elsewhere.

(6) Publishes a weekly information bulletin, with Washington news, notices of second-hand equipment for sale or exchange, hints on maintenance practices, and other items which interest short line operators.

(7) Represents members in dealings with trunk lines on details of interline car and revenue accounting. Thus, for example, when some members felt they suffered undue loss from a minimum adjustment of $5, the association got special exemption for them.

Legislative Program

The short line association has a vigorous and forthright legislative program and exercises its "grass roots" influence in helping to attain its objectives. Most of its federal legislative objectives have to do with equalizing regulation and public support among the carriers and preventing strikes or undue preference for unions. Since at least a third of its members are owned or controlled by shipping industries, and are affected by the "commodities clause," the group is opposed to "any legislation which would place further limitations or restrictions upon the ownership of railroads by industries."

A large majority of the revenues of the short lines come from divisions of through, interline rates. The proportion increases as short-haul local traffic is lost to the trucks. Thus the preservation and expansion of through rates and routes, and the establishment of divisions which will sustain them, are of supreme importance to the short lines. The association has been active for many years in presenting the case of its member roads in negotiations with the Class I roads and in such proceedings as reach the commission, when the railroads themselves fail to agree. In 1920, the association secured a provision in the Transportation Act, Section 15 (6), which strengthened I.C.C. powers over divisions and cited revenue needs of individual roads as a consideration in apportionment of joint rates.

The Class II and III roads depend largely on their trunk line connections for freight cars. According to the report of the federal coordinator, "for other than certain classes of tonnage wholly local to their own line, they are not justified in ownership of such cars; per diem or average payments do not warrant investment for the benefit which would be received. Switching and terminal companies own proportionately fewer cars than do even the short, line-haul roads—and rightly so. Thus, during periods of general car shortages, the problems of the short lines in meeting the demands of shippers for equipment are difficult, because they depend solely upon their already sorely pressed connections."

Freight car ownership (end of 1949) of various classes of railroads was as follows:

Class I:	1,777,661
Class II:	10,987
Class III:	649
Switching & Terminal:	14,257

Successive increases in the per diem rate have, according to many short line officers, changed conditions, so that, even with "free time" allowed feeder roads, the cost of car hire is so expensive as to make desirable an ownership of more cars than used to be the case. In 1949, the car service committee of the association recommended that member lines consider acquiring "proper" numbers of cars to take care of their originated traffic, and at the same time, file amended car service rules with the I.C.C. eliminating the requirement that the loading of foreign cars be given preference over loading of system cars. "Admittedly," said the committee, increased ownership would boost empty car mileage, but it would "tend to distribute the burden, instead of concentrating it on the short lines, as is now the case, through excessive cost of car hire." Early in 1950, the association filed with the commission a proposed set of rules, the principal effect of which was to omit the present Rule 1 requiring use of foreign cars to originate traffic, in preference to system equipment.

Strength in Independence

During the consolidation fever of the Twenties, the idea of having connecting trunk line systems absorb most of the short lines was popular. In a few instances when trunk lines sought to unify desirable heavy traffic lines, the I.C.C. imposed, as a condition, the absorption by purchase of connecting short lines of less desirable character. As late as 1931 the president of the American Short Line Railroad Association strongly urged the consummation of widespread consolidation proposals then under consideration.

The consolidation fever died with the depression. Since that time, although many of them have had to quit operation, the remaining short lines have appeared to be somewhat more capable than their Class I neighbors in squeezing traffic out of their territories and meeting truck competition. A considerable mileage of road formerly operated as integral parts of Class I systems has latterly become independent short lines, either by outright sale to new owners, or failure to renew leases when they expired. With their greater flexibility, especially in labor contracts, newly created short lines have been able to continue rail service in areas where a branch of a Class I road would have had to suspend operation.

The association no longer advocates absorption of the short lines; indeed it favors creation of more of them. Thus, speaking extemporaneously back in 1936, President J. M. Hood remarked that "there ought to have been more short lines, instead of throwing together a lot of railroads which could not be operated on trunk line standards and under trunk line conditions."

New end-of-double-track switch at UR, showing, in the background, ballast of second main track that was removed

Faster and longer trains and changes in traffic and train movements permit more efficient and economical operation by signal indication on single track, using long sidings

Why the Erie Has Converted 57 Miles of Double Track to Single Track

Out of 65.7 miles of line between Buffalo and River Junction, N. Y., the Erie has converted 56.7 miles from conventional double track to single track with a traffic control system. River Junction is 358 miles from Jersey City, on the Erie's main line between that point and Chicago.

The 65.7-mile line, branching off at River Junction and terminating at Buffalo, has been double track for years. Within the past 10 years, traffic has gradually decreased in this Buffalo-River Junction territory, and at the same time the character of through freight moving between Buffalo and points east has changed, so that traffic is now handled more efficiently in long trains, hauled at increased average speeds by diesel-electric locomotives, rather than in shorter trains by steam locomotives. Recently passenger train service on the Buffalo-River Junction territory was discontinued. These changes reduced the number of trains, as well as the time of trains enroute.

All these considerations led to the decision to change the line over from double track to single track. The incentive to act in 1951 was the immediate need elsewhere for the rail and ties to be removed, as well as to reduce track maintenance expenses. For the project as a whole, the retirements included 47.5 miles of second main track, 2.7 miles of sidings and 17 turnouts. The rail removed included 21.27 miles of 110-lb. laid in 1926-27-28; about 24.37 miles of 112-lb. laid in 1941-48, inclusive; 1.1 miles of 115-lb. laid in 1948; and 0.85 miles of 132-lb. laid in 1949. Roughly 110,000 ties, in condition for reuse in main track, were salvaged. The total salvage value is approximately $575,300, and the expense of the operation is about $136,200, leaving a net salvage of $439,100. The estimated cost of changing the turnouts and other track changes is $37,570, and of the signal changes and additions is $463,347, totaling $500,920. Thus, the salvage of rail and ties paid all but about $62,000 of the entire project cost. The estimated reduction in track maintenance expense is $92,000 annually.

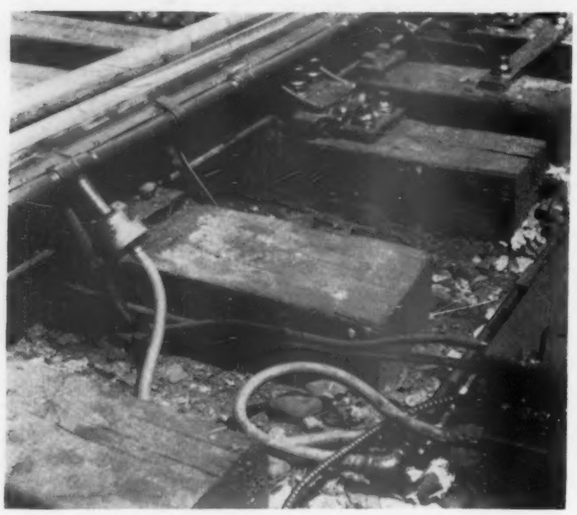
Characteristics of the Line

In general, the grade of the line ascends eastward at rates varying up to 0.66 per cent for about 21 miles from "UR" (Union Road) to a point near Darien Center. Then the grade descends for a few miles to Attica, whence there is a grade of 0.75 to 0.94 per cent ascending eastward for about 5 miles. From there on east, the grade is rolling.

When making the changeover, the double-track main line was not disturbed from Buffalo out through the terminal and yard area for 5.8 miles to a new end of double track at "UR" (Union Road) from which point the new single-track line extends eastward. At the east end of the project, double track was left in service for 3.4 miles west from River Junction to Portage, which is the new end of double track. Thus from Portage to Union Road, there is now 56.7 miles of single main track, replacing the double track.

Three scheduled manifest through trains are operated each way daily on this line, but their schedules are such that there are no meets in the Union Road-Portage section. When traffic is heavy, one or two extra trains are operated each way daily. There is a local freight each way

Each spring switch layout includes a new hand-throw mechanism with an oil buffer spring device



Remotely controlled gas-fired switch heaters prevent snow from accumulating and blocking the switches

daily except Sunday. In all, from 6 to a maximum of about 12 trains are operated daily.

A study of train operations indicated an average of about 45 meets per month between opposing trains in this 56.88 miles, an average of about 1.5 meets daily. Further investigation led to the conclusion that there should be two sidings in this territory; and these were formed merely by leaving the second track in place and by installing turnouts to connect to the single main track.

The six manifest freight trains are scheduled to make no meets in the Union Road-Portage territory. Therefore, under normal circumstances, the only trains which take siding are extras and the local freights. Under these circumstances it was decided not to use power switch machines, thereby reducing the cost of equipment for the project. Spring switches, with Pettibone-Mulliken oil buffers, and Union Switch & Signal Style S-21 mechanical facing-point locks were installed at the ends of double track and at the west end of each siding. U.S.&S. Style T-21 switch stands and electric locks were installed at the east ends of the two sidings. At these two switches, derails at the clearance points are pipe-connected to the T-21 switch stands. At the ends of double track and at the ends of sidings, new searchlight signals were installed at locations shown in the track and signal diagram Fig. 1.

The new traffic control system between Union Road and Portage is controlled from a machine in the dispatcher's office at Buffalo. This machine includes levers for controlling signals at the two ends of the two sidings and at the two ends of double track at Union Road and Portage. On the dispatcher's machine there is also a lever corresponding with each of the six switches at the sidings and ends of double track. When establishing control for a signal to direct a train to enter or leave a siding, the switch lever, as well as the signal lever, is thrown to establish outgoing control codes. At the field station, the code established by the position of the switch lever controls a relay that determines the selection between signals. Other levers on this machine control the release of electric locks on hand-throw switches. At the ends of double track, at Union Road and Portage, the spring switches are normally set to route trains from the single track to the right-hand main. A train in the opposite direction approaching on the right-hand main track trails out through the spring switch to the single track. Thus, for trains in either direction, no stop is required to throw switches at these locations.

How a Train Is Put on a Siding

Fig. 2 shows the layout of track and signals at the siding at Alden. When a westbound train, for example, is to be directed to enter this siding, the dispatcher in Buffalo positions his levers and sends out a control that causes westward station-entering signal L44 to display red in each of the two upper units and the letter "S" to be illuminated white in the bottom unit. This same control also causes the signal in approach, 402-1B, to display the Approach aspect, yellow. The "S" unit consists of a cast-iron lamp body with a ground-glass cover, 14 in. in diameter. This unit is normally dark. When the proper control is received from the dispatcher, the letter "S" appears with a white background, on the ground glass cover.

When the train arrives and stops short of signal L44, the head brakeman operates the T-21 hand-throw stand to reverse the switch. Then the letter "S" is extinguished, and the signal displays red-over-yellow, which authorizes the train to enter the siding. After the rear end is in the clear, the rear brakeman places the switch "normal."

When the dispatcher is ready for the westward train on the siding at Alden to depart, he sets his levers and sends out a C.T.C. control which causes the leave-siding dwarf signal, LD48, to display a proceed aspect. The train then trails out through the spring switch without stopping for a trainman to operate the switch stand. As the rear of the train passes through the switch, it is restored automatically to its normal position.

Ordinarily the dispatcher would put westbound, rather than eastbound, trains on siding. However, if need be, he can control the eastbound station-entering signal to direct an eastbound train to enter the west end of a siding. For example, as shown in Fig. 3, the dispatcher sends out a control to cause eastward signal R48 to display red in each of the two upper units, and letter "S" illuminated white in the bottom unit. When the train arrives and the head brakeman throws the switch, the

letter "S" is extinguished, and the signal displays red-over-yellow to direct an eastbound train to enter the Alden siding. When the dispatcher is ready for this eastbound train to depart from the siding, he sets his levers and sends out a control that causes eastbound leave-siding signal RD44 to display red over an illuminated "S" and also effects a release of the electric lock on the hand-throw switch stand. The aspect of the red over "S" authorizes the head brakeman to go to the switch and reverse it, which operation also removes the pipe-connected derail from the track. When the signal displays red over yellow, the train pulls out on the main track and stops to wait for the brakeman to place the switch normal. Ordinarily this operation would be used only for the local freight train or a work train.

This new traffic-control single-track territory includes 23 hand-throw main-track switches leading to house tracks and industry spurs. At each of these switches, there is a manually operated switch-and-lock movement. On each switch stand, there is an electric lock which locks the lever in the normal position. At the clearance point on each of these turnouts to spurs there is a Hayes derail which is pipe-connected to the switch stand at the switch. Short track circuits, about 150 feet long, extend in either direction on the main line from each switch. These circuits enter into the control of the release of the electric lock. Also, the release is controlled by trains on approaching sections of main track in a manner similar to approach locking at interlocking.

Near each of these switches there is a telephone box and a short pipe mast with an indicator and a key controller. Before using one of these switches the conductor of a train must use the telephone to get permission from the dispatcher. When the indicator shows Stop, and the dispatcher has given permission to use the switch with the approach occupied, the conductor inserts his switch key in the key controller and turns it to the right. This initiates a six-minute automatic time release. After this interval the lock is released.

In order to keep the switches clear of snow, gas-fired heaters, remotely controlled from the dispatcher's office as part of the traffic control system, were installed at the switches at the ends of double track and the ends of sidings. These heaters, and the control equipment for lighting them, were furnished by the Rails Company, New Haven, Conn.

This traffic control system project was planned and constructed by signal forces of the Erie, under the direction of W. S. Storms, signal engineer. The major items of signaling equipment were furnished by the Union Switch & Signal Division of Westinghouse Air Brake Company.

Fig. 1

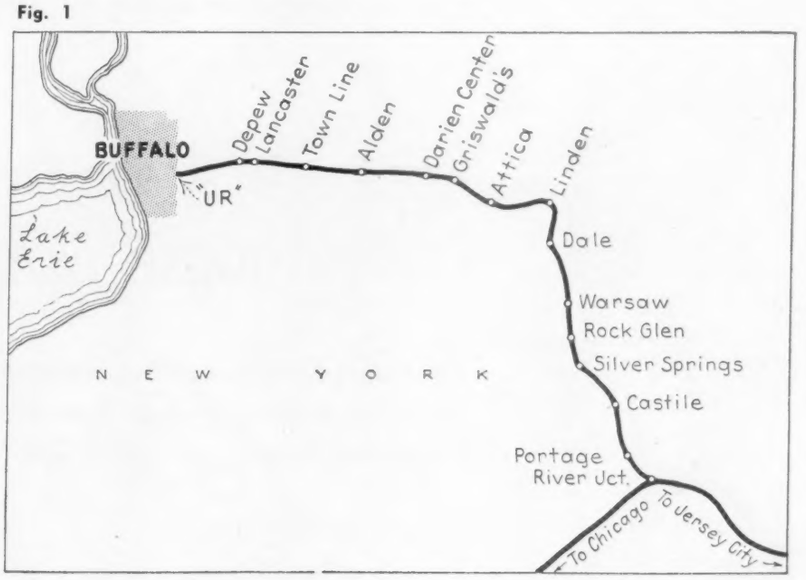


Fig. 1—Map of territory between Buffalo and Portage

Fig. 2—Signaling at sidings and ends of double track

Fig. 3—Signaling at Alden Siding

Fig. 2

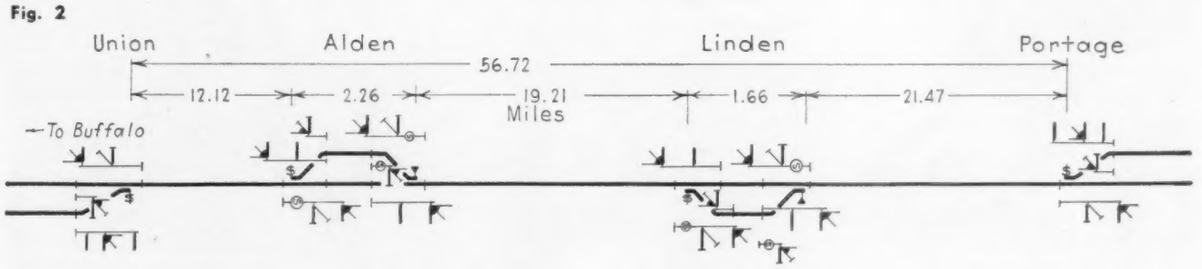
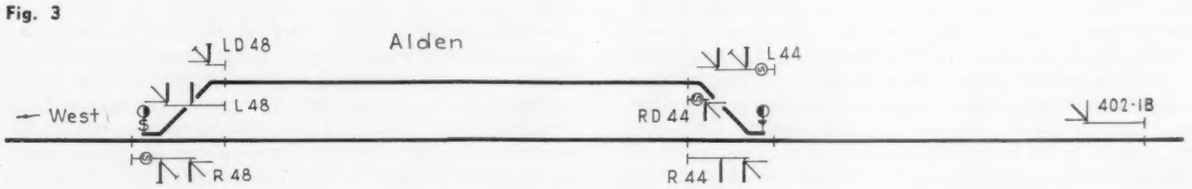
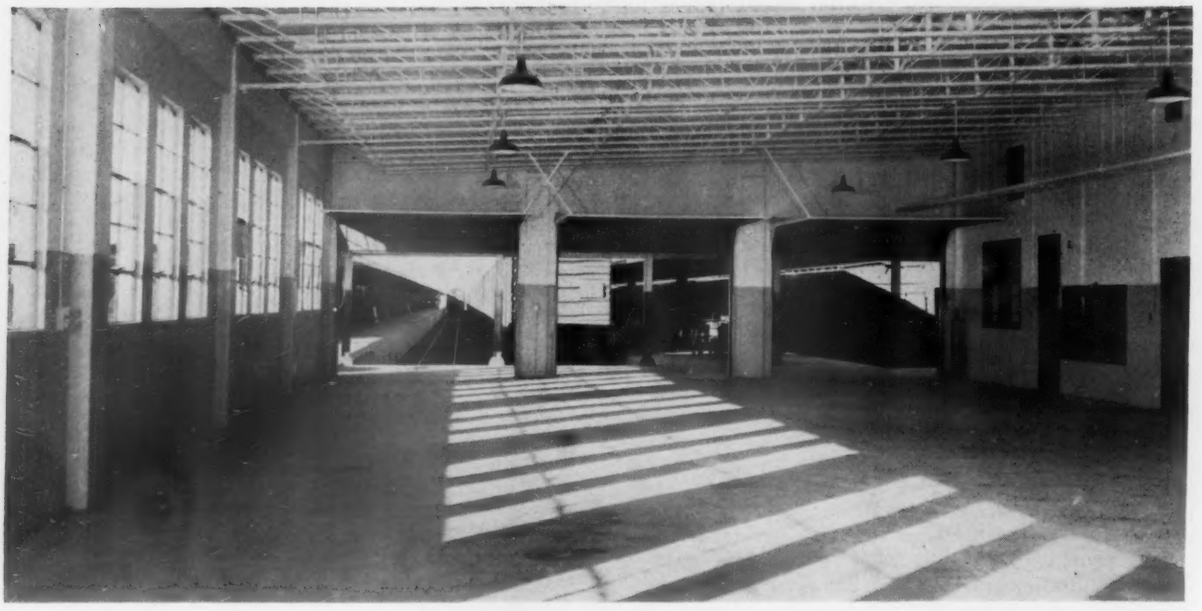


Fig. 3





Two demands by freight agents that seem to predominate over all others for locations where mechanized equipment is used are ample platform and warehouse space and adequate lighting

How Special Design Features Enhance

Freighthouse Mechanization

To permit machines to be used with maximum efficiency careful attention is being given such matters as the lengths and widths of platforms, floor construction, and the need for crossover bridges

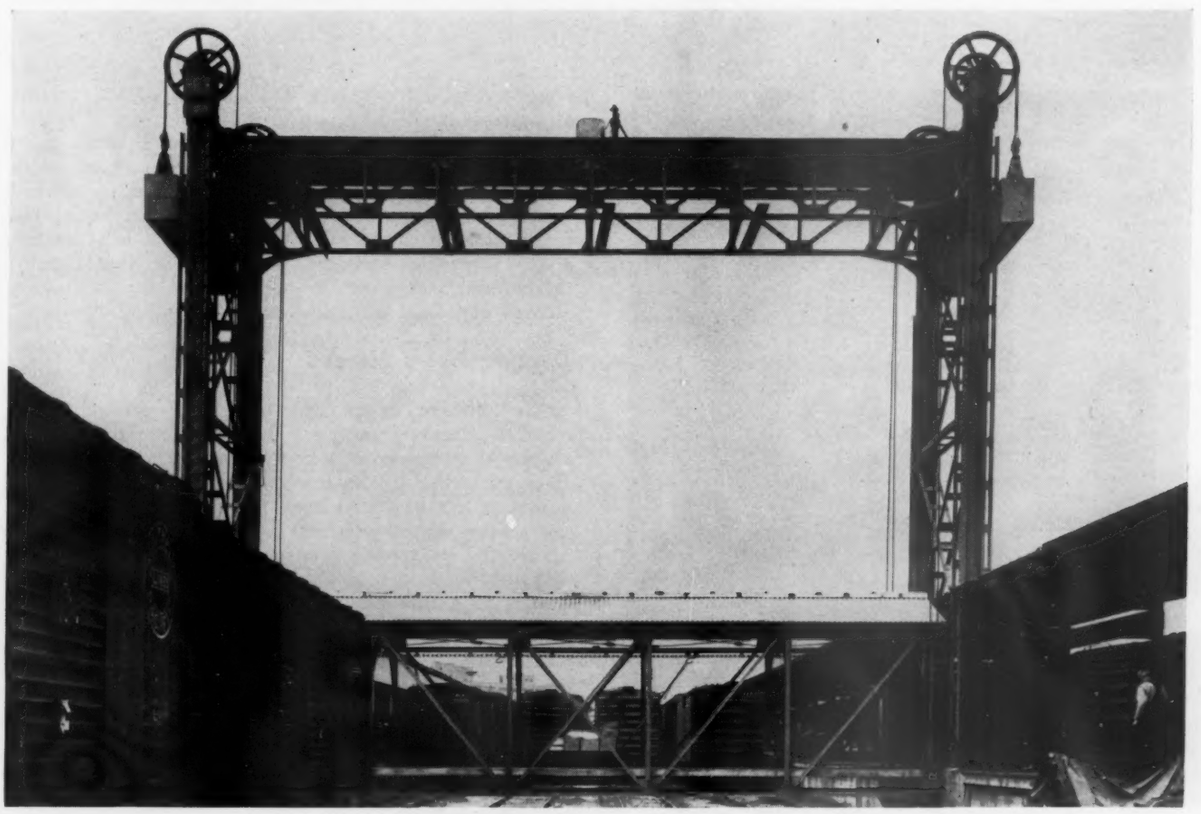
In order to take better care of l.c.l. freight business that might otherwise be hauled by truck, and to make the handling of such freight show a profit, the railroads are turning more and more to mechanical freight-handling equipment. This equipment includes tractors for hauling trailers, fork-lift trucks, live and semilive skids, endless conveyors of both the overhead and underfloor types, and cranes. This trend in freight handling gives rise to the question as to what design features must be incorporated in freighthouses to assure the most effective use of mechanized equipment.

In the first place, in order to use such equipment at all, it must have space in which to maneuver—which means aisles of adequate width. Conditions where truckers have to move merchandise or equipment aside to make a passage cannot be tolerated in a freighthouse using mechanical equipment, because the equipment must be kept moving to produce the best results. Generally, an aisle 8 to 10 feet wide will permit the movement of the equipment when hauling loads and will also afford space to maneuver the machines when picking up and setting down loads. In locating the aisles, consideration must be given to the provision of sufficient room for turning mechanized equipment when passing into or out of cars. Correlated with the use of mechanized equipment is the growing tendency of keeping freight on wheels, skids, or pallets, which results in a minimum of handling as well as in holding down loss and damage claims.

Desirable Platform Lengths

Platform lengths generally are contingent upon the daily number of car classifications, and for tailboard frontage, the average hourly peak of trucking business. In the past, when hand trucking was generally prevalent, there was need to keep freighthouse platforms as short as possible to reduce the time required in trucking merchandise to and from cars. As a result, more tracks on relatively close centers were needed for the volume of business enjoyed. This arrangement necessitated truck-

Above—While platforms having wear-resisting and uniformly smooth surfaces are desirable in any freighthouse, they are even more essential where mechanized equipment is used.



Below—Lift bridges connect freighthouse platforms at intervals, resulting in shorter hauls and less congestion. These bridges are often roofed to protect lading from weather

ing through cars spotted near platforms, interrupting stowing operations there, to reach cars placed on intermediate tracks. Today, while it is still desirable for the sake of economical operation to keep platform or freighthouse lengths as short as practicable, the speed of the mechanical equipment results in relatively little loss in time for longer freighthouse hauls. As a consequence, where feasible, platform lengths are increasing.

There seems to be a general concensus that freighthouses should be 60 feet wide for inbound stations where a substantial amount of business is handled, and from which city deliveries are made, and 50 feet wide

Steel grid flooring is popular for use on crossover bridges, and overhead lights promote safe operation of equipment

Where equipment is employed to facilitate the stacking of freight, the provision of adequate headroom is important

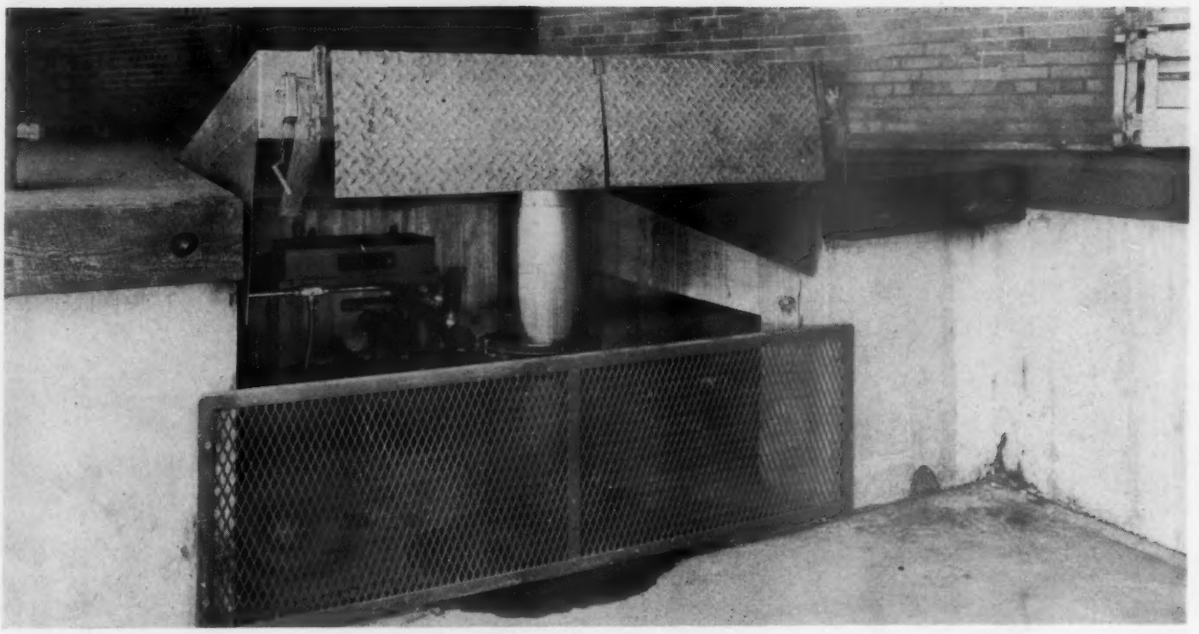
for the smaller stations. For transfer operations, widths of 45 feet are considered sufficient. These widths permit adequate zoning of freight by locations while combined in unit loads on pallets, four-wheel trucks, skids, etc., and waiting to be trucked away. Outbound freighthouses need not be so wide because the freight is handled almost as soon as it is unloaded. Widths of these houses range from 30 to 40 feet, depending upon the volume of business handled.

Island platforms with tracks in pairs between them are a "must" for the economical operation of a modern mechanized freight station so all cars can be worked without having to move through other cars. Such platforms, it is generally agreed, should be at least 24 feet wide to provide sufficient room for the free flow of mechanized equipment as well as for the temporary storage of freight while loading or unloading cars.

Durable Floors Needed

Freighthouse floors are necessarily strongly constructed and preferably of durable material. Concrete slabs with embedded steel grid flooring or a wear-resisting floor surfacing are an example. Wood floors and platforms, unless protected by a more durable surface, are soon worn out in such service, particularly in the aisle areas, and their early deterioration, sometimes resulting in spilled loads, does not help in keeping loss and damage claims to a minimum. Some roads have added to the service life of wood floors in aisle areas and runways by laying steel floor plates over them, but these are noisy and require some means for adjusting the fastenings for good maintenance. Other roads have used asphalt plank as a surfacing for timber platforms. One of the essentials is that the surfaces be of the type that will not deteriorate rapidly, that may be easily cleaned, and that can be maintained for some time in a uniformly smooth condition.

Surfaces of platforms should be given a slight slope downward away from their edges to keep wheeled equipment from rolling off. Also, it is necessary to provide means to permit mechanized equipment readily to enter trucks and cars. For loading into cars this requirement is usually satisfied by steel throwover aprons, 48 inches wide, as the car-floor heights do not greatly vary. However, because of the wide variation in the floor heights



Because of variation in the tailboard heights of highway trucks and trailers hydraulic tilting loading ramps are being installed with increasing frequency

of trucks and trailers, the steel aprons are not always satisfactory on the tailboard sides of freighthouses. In such instances, hydraulically operated tilting ramps may be installed for making necessary adjustments in height. These devices are operated from the freighthouse platform by push-button control.

Bridges Enhance Efficiency

Crossover platforms are frequently provided for connecting freighthouse platforms with island platforms, and with each other for transfer operations. These crossovers are generally located at the ends of the platforms of smaller freight stations, and from 750 to 1,000 feet apart at the larger stations. There is some diversity of opinion on these distances, because of the speed of mechanized equipment, but the longer spacings do not seem to be too objectionable, even with oneway operation. A case in point is one freighthouse where a continuous overhead chain conveyor makes a circuit connecting inbound and outbound freight platforms over bridges spaced 1,314 feet apart. When these bridges were recently placed even farther apart to give more platform area only two minutes was added to the time required to make a complete circuit.

Platform crossovers are effected primarily by lift bridges of both the vertical lift and bascule types, and by hydraulically operated drop tables. These bridges are usually provided with controls that can be locked as a safeguard against improper use, but which can be quickly unlocked so that the bridges can be moved into the clear to permit cars to be switched. Crossover platform widths of 12 feet will permit the safe passing of traffic in both directions. Where possible, the crossovers should be roofed over to prevent damage to merchandise.

At some freighthouses crane trucks are proving useful for lifting and moving heavy loads, and in these structures the load designs are figured accordingly. For handling extremely heavy loads, it is customary to equip the station with either a gantry or jib crane on an uncovered extension of the outbound platform. Since it is sometimes desirable to operate mechanical freight-handling equipment at street level, a ramp is provided at a convenient location in the more modern stations, especially where there are adjacent team tracks.

Other Requisites

To permit maximum maneuverability of equipment modern freighthouses are generally constructed with clear spans between the side walls. There is also a trend toward more headroom, especially where the stacking of pallet loads is practiced. Careful consideration is given to ventilation to remove fumes from gasoline-engine-driven machines.

It has been only in recent years that the importance of adequate lighting for both day and night use has been recognized. Good lighting will go far in reducing incorrect freight routing and loss and damage, as well as in promoting the safe operation of equipment. The liberal use of skylights and a greater intensity of lighting have been repeatedly requested by freight agents. Because of the relative narrowness of freighthouses and platforms, and because freight is often piled high, wide-angle light distribution is preferred.

A freight station using mechanical equipment is not complete without a garage for storing, servicing and repairing the equipment. Such garages are generally placed on the same level as the freighthouse platforms and are preferably located at one end where a fire would not endanger the whole station. It is desirable to locate oil and gas pumps nearby but outside of the garage and freight station.

These general principles of design are applicable to all proposed modern stations and to those that are to be modernized. Each one will have its own particular mode of operation and style of equipment and must be designed individually.

Typical Wyoming countryside around Lander, where the Chicago & North Western's phosphate development project has been centered

Team Work in Developing

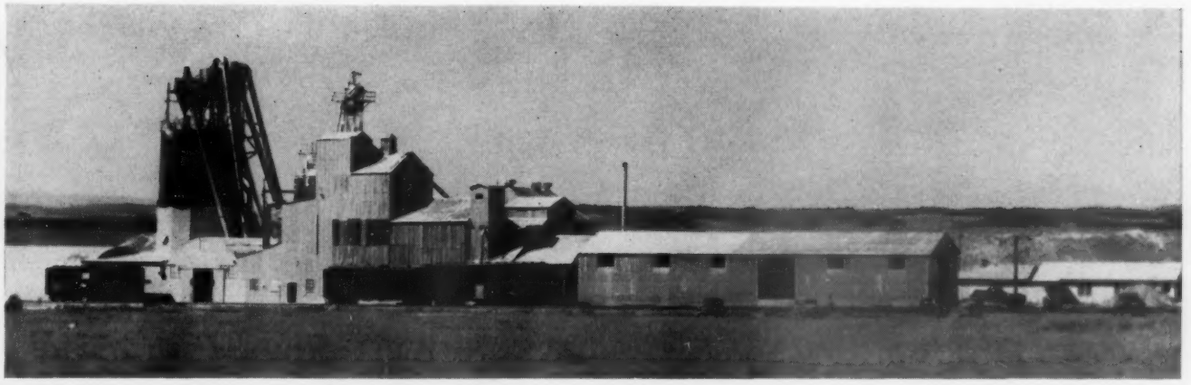
New Industries for New Traffic

By exploiting natural resources the Chicago & North Western builds traffic on its light density secondary lines in Wyoming and South Dakota

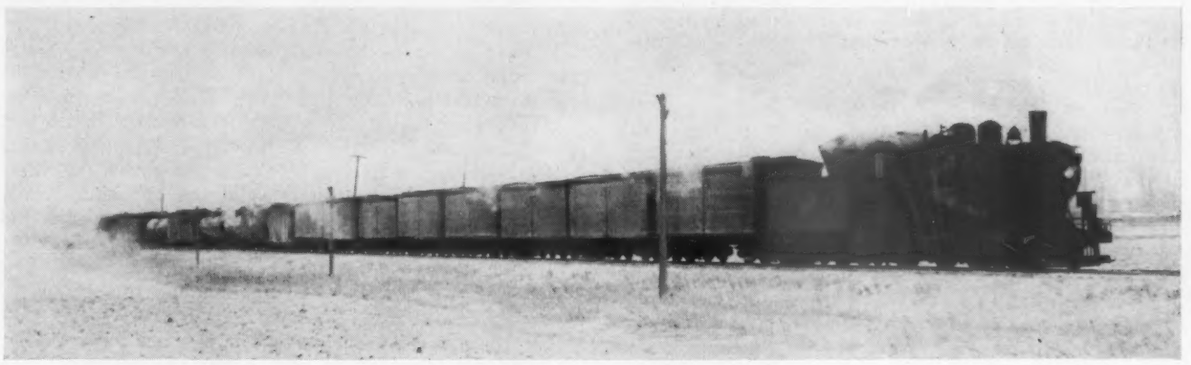
The Chicago & North Western is predominately a "short-haul" railroad—in spite of the fact that its lines reach 1,200 miles west and 470 miles north of Chicago. It is plagued with the problem of maintaining 9,700 miles of line though most of its traffic density is crowded into a relatively small portion and involves large numbers of short movements. Part of the lack of long-haul traffic stems from the fact that two of the lines which, off-hand, appear to offer best opportunities for development—the 790 miles from Omaha west to Lander, Wyo., and the 735 miles from Elroy, Wis., across Minnesota and South Dakota to Rapid City—traverse marginal land which is thinly settled. The traffic available to these lines is almost entirely agricultural and highly susceptible to truck competition.

The North Western management believes that it can improve the road's traffic density if a way can be found of building long-haul traffic on these lines. This is not easy because of the sparse inhabitation of the territory. Without people there can be no traffic. And without industry, or some other means of earning a livelihood, there can be no people. The North Western has set out to overcome this situation—and to produce new long-haul traffic—by research into the natural resources of its territory, and by industrial development aimed at moving in industries to develop and make use of these resources.

This work is carried out by team work between the traffic department, the industrial development department, and a research group. The research group is independent of the departmental organization of the railroad and handles a wide variety of problems which involve several departments and are of particular interest to top management.



The American Colloid Company's bentonite processing plant northwest of Belle Fourche, S. D., on the new line built by the North Western to tap large bentonite fields as a part of its long-range traffic development program



The Chicago & North Western's lines across South Dakota and Wyoming traverse sparsely settled territory which originates little traffic. To build traffic for these lines the railroad has undertaken a successful long-range traffic development program which is based on the exploitation of locally available natural resources

Among many other things, the research group undertakes to survey the natural resources of the North Western's territory, and to assay their potential quantity and quality.

This work is based on the use of commercial economic geology and mineralogy—not theoretical or historic geology and mineralogy. The principal difference is that commercial economic geology and mineralogy is concerned with the potential uses and value of various mineral deposits as well as the geological conditions relative to their location and formation.

These geological and mineralogical surveys of natural resources in the road's territory have been conducted for over 10 years. The first few years saw relatively little usable material produced because of the sheer magnitude of the task, and because of the time required to conduct even a limited survey in one restricted locality. In recent years, however, the wealth of information assembled and collated in the past is becoming increasingly more valuable in assisting industries seeking locations and new sources of raw material.

Four principal steps are followed in transforming potentially valuable natural resources into active producers of traffic: (1) an evaluation of the quantity and quality of the resources in a particular location or deposit; (2) a survey of the potential markets and outlets for that material, or of principal products made from it; (3) an analysis of the economics of distribution —i.e., can the product be placed in the principal consuming markets at competitively attractive prices?—and (4) locating an operator willing and able to develop and work the particular deposit or resource.

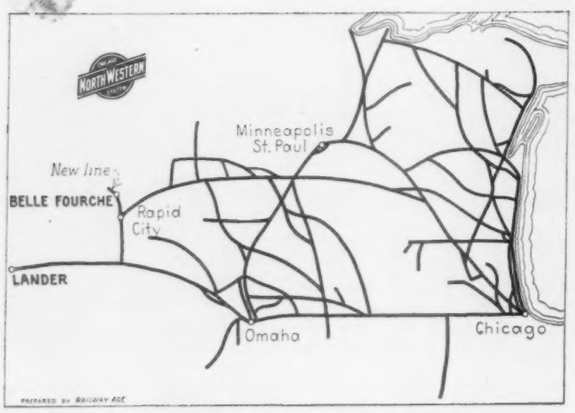
The last is the hardest task, and involves finding some person or organization, with the technical knowledge and financial ability to conduct the actual operation, as well as the marketing ability actually to move the product in competitive markets.

Slippery Bentonite

How this approach has paid off is illustrated by the development of bentonite traffic from the Belle Fourche area of South Dakota, Wyoming and Montana—about 54 miles north of Rapid City and near a point where the three states join. Through the efforts of local interests and of the North Western, working cooperatively, the bentonite industry in this area has grown from a meager beginning in 1934, when 126 carloads were shipped, to where shipments are now being made at a rate of about 10,000 carloads a year—or almost 200 carloads a week.

To accommodate this growing traffic, and to stimulate the location of more plants in the bentonite beds, the road recently built one of the newest stretches of railroad in the country by extending its line 18½ miles northwest of Belle Fourche into the southeastern corner of the best bentonite fields.

The bentonite in the Belle Fourche region is a superfine



This map shows how the Lander and Rapid City lines of the C. & N.W.—which system is suffering from too large a proportion of short-haul traffic—offer the best opportunities for the development of long-haul traffic

dry powder, composed principally of the clay mineral "montmorillonite." In addition to being exceedingly slippery and very fine—so fine it will remain in a water suspension indefinitely—it is highly absorbent of water, oils, glycerin, dyes, metal salts and many other chemical substances and possesses unusual gelling characteristics. Barely 20 years ago its great versatility and its thousands of uses were unknown, and the limited supplies needed to meet the existing demand were being drawn from deposits in Wyoming in areas beyond the North Western's lines.

Natives around Belle Fourche—a cattle-raising center and the northern end of the famed Chisholm cattle trail—had long known about the slippery "soap holes" which dotted the grazing land northwest of the town. These "soap holes"—so named because of their soap-like slipperiness and because the Indians at one time used the material in them for cleaning purposes—were a serious hazard and annoyance to cattlemen because a steer or horse which strayed into them practically always broke one or more legs. However, a few local people thought that the material comprising these "holes" must have some commercial value. It was largely through their efforts that this substance was identified as bentonite, and that its hundreds of industrial and commercial uses have been discovered. Today it is almost a "miracle substance," with an almost unbelievable variety of uses—as an ingredient in toothpaste and cosmetic leg paints, for water softening and filtering chemicals, as a cleaning agent and as an ingredient in "foundry sand," as well as in drilling oil wells and plugging leaks in dams.

When the extent of the Belle Fourche bentonite beds first became known and the hundreds of uses for it began to be discovered, the North Western's research group—acting as fact-finders for the railroad—began to investigate the potential value of this deposit as a source of traffic. It first checked the quantity and quality of the deposits, and found that they were almost unlimited as to quantity and of the highest quality yet discovered. It next checked the potential markets and outlets—and found they were primarily in the industrial East. It was determined that, under the economics of distribution, the product could be sold at attractive prices in its principal markets. In short, it looked like a good source of potential traffic.

But the best bentonite fields were some 17 or more miles northwest of the railhead.

Having assured itself of bentonite's bright future, the industrial development department went to work to assist in the location of willing and able operators. This wasn't hard in this particular case, because several were on the spot—but they were unwilling to go ahead with their plans for expansion and development until assured by the North Western that it would build a rail line directly into the field. This line was completed in 1947, and is now serving two large processing plants, as well as several smaller operators.

This bentonite development is still growing, and is giving the North Western about 10,000 carloads a year of new traffic on a line which needs traffic. And the greatest portion of these shipments are moving to Chicago or east, giving the North Western a coveted long haul.

Phosphates and Fertilizers

Another similar example of long-range traffic development is just approaching the fruition stage with the decision of the Continental Sulphur & Phosphate Corp. to build a superphosphate plant at Lander, Wyo.—the westernmost point on the North Western system. This project goes back to North Western officers' belief that the phosphate formations in and around Lander should have some commercial value. It was recognized that these deposits were impure, and would not be commercially valuable until some economic method could be found of cleansing them of their impurities.

Here again—as in the case of bentonite—the first step was to determine the quantity and quality of the available resources. Inasmuch as this was a larger task than the railroad could undertake alone, it succeeded in obtaining state and federal agency cooperation in a complete geological survey of the region which disclosed that the deposits were both extensive and of a potentially commercial grade—if the impurities could be removed.

Phosphate is the most important single ingredient in certain fertilizers for which there is great need in the farming areas of the Dakotas, Iowa, and other midwestern states, so the second step—a survey of potential markets—found them right at hand, and waiting. The distribution would be economic inasmuch as Lander would be much nearer these consuming areas than other principal sources of supply. But the problem was to find an efficient method of purifying the ore so that it could be economically processed, using nearby sulphur deposits. That turned out to be quite an order.

The North Western management was so firmly convinced of the value of this deposit, however, that it joined with the University of Wyoming in research into possible methods of reducing the ore economically. The North Western originally helped finance this research, as well as meeting the cost of building a pilot plant for working the "bugs" out of the process now being perfected by the university and Continental Sulphur & Phosphate. With the completion of the initial phase, it was possible for the railroad's industrial development department—working in cooperation with the state of Wyoming—to set about finding a "willing and able operator" to build a plant utilizing the process now being fully developed.

Plans for the phosphate plant are now nearing completion, and it is anticipated that it will produce approximately 1,000 carloads of fertilizer annually when it starts operation. If this premier operation proves successful, the plant undoubtedly will be expanded to take on the manufacture of more superphosphate and phosphate products—all of which will mean more traffic for the North Western.

For Extra-Size Loads . . .

A High-Capacity Depressed-Center Flat Car

The Pennsylvania has completed at its Altoona works the first of a lot of nine depressed-center flat cars, Class FD1, having a tangent length of depressed platform of 30 ft. and a load limit of 332,700 lb. The car was designed primarily for shipment of large turbogenerator sets, transformers, presses, and similar loads.

The mechanical engineer's department of the Pennsylvania and the General Steel Castings Corporation's engineers collaborated in the design of the cast-steel car body, and General Steel poured the casting. The body casting weighs 110,230 lb. The casting was tested at the foundry under a concentrated load applied at the car center by hydraulic jacks, the test load being approximately 10 per cent greater than the equivalent load limit uniformly distributed on the 30-ft. platform. The deflection at the car center under this load was 1.170 in. The car will carry the load supported on crossbearers each side of the center line or, if uniformly distributed, not less than 10 ft. on each side of the center line.

The car, complete, weighs 169,300 lb. and is carried on four four-wheel trucks with 6½-in. by 12-in. plain-bearing axles and 33-in. wrought-steel multiple-wear wheels, Class D33. A span bolster connects the two trucks under each end of the car. The truck frames, truck bolsters, and span bolsters are Buckeye Steel castings.

There are high level platforms 16 ft. 6 in. in length at either end of the car. These are covered with 2⅜-in. wood floors. The top of the depressed platform is 30 in. above the rail for the light car. The under side is 7⅞ in. above the rail.

The cars have a coupled length of 75 ft. 4 in. and are 10 ft. wide. The distance between span bolster centers is 53 ft.

Couplers and yokes were furnished by the National Malleable & Steel Castings Co. There are double installations of both air and hand brakes. The air brake is AB10 Westinghouse and the hand brake the non-spin type of the National Brake Company.

These A. C. L. Covered Hopper Cars Have Timken Bearing Trucks

400 cars for phosphate service have cartridge-type bearings and Standard stabilized trucks with long-travel springs

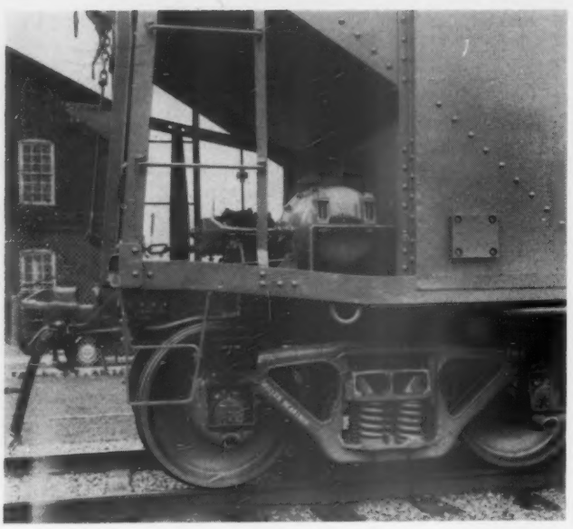
During the past spring the Atlantic Coast Line received from the American Car & Foundry Co. 400 covered hopper cars for phosphate service. These cars, which are of 70 tons' capacity, are equipped with four-wheel trucks in which are installed Timken cartridge-type roller bearings. The trucks are of the Barber stabilized type with 2½-in. travel bolster springs and are spring plankless. Low-alloy high-tensile steel has been used extensively for body sheets and roof. The frame members are generally of carbon steel. The weights and principal dimensions are shown in the table.

Car Body

The cars are built up on two center-sill channels 12 in. by 30.9 lb. with the flanges turned in and a top cover plate. Angle reinforcements are applied at the bottom of each center-sill channel between the striker castings and the slope sheets. Frame members, with a few exceptions, are rolled sections. End sills and side sills are angles. Each bolster is a deep web with a wide cover plate at the bottom and a top cover plate which is welded to a transverse end floor-sheet brace at the top. The web and bottom cover plate are joined by angles and riveting. The ends of the web are also riveted to the bolster side posts. Three crossbearers are located between the hoppers. They are flanged at the bottom and extend up from the bottom of the center sills about 4 ft. 3 in. They are stiffened transversely at the top by pressed-steel flanged members riveted to the top of the web. The web is riveted to the inside side posts and to the crossridge floor slope sheets. It is secured to the sides of the center sills and to the longitudinal hood sheets by angles and rivets.

There are eight hoppers, four on each side of the cen-

Atlantic Coast Line 70-ton covered hopper with roller-bearing trucks



Left—The Timken bearing housings are applied in the journal boxes of integral side frames. Right—The roof and the B end of the car

ter sills. Except for the end hoppers, these are enclosed by the crossridge floor sheets and the inside and outside hopper sheets. The sheets are joined by riveting. The outside hopper sheets are welded to the side sills and the inside riveted to the center sills under the longitudinal hood sheets. The end floor slope sheets are in three sections, butt welded over angle floor supports, but are riveted to the car sides and to the end hopper side sheets.

The hopper openings are closed with Wine frames and hinges, with adjustable locks. The center sills have McConway & Torley combined striking castings and front draft lugs. The bolster center filler is a combined welded and riveted design which includes the rear draft lugs. Both are riveted to the center-sill webs.

The side sheets extend between the bolster side posts. These are of Z section. The intermediate side posts, five on each side, are 5-in. bulb angles and are welded to the side sills. The side sheets are welded to the side sills and side posts, and the side plates are welded over the outside side sheets.

The roof is supported on five intermediate carlines and eight others which support the hatch frames. There are four hatches on each side of the car. The openings are 37¼ in. long and 35 in. wide.

Roof sheets are secured to the carlines by closely spaced rivets and all roof-sheet laps are separated by tar paper. The roof is also riveted to the side plates.

The hatch frames are of welded channel construction

R. H. Kindig Photo

EIGHT DIESEL-ELECTRIC UNITS "doubleheading" a 62-car Union Pacific train up Cajon Pass grade

and are welded to the roof. The hatch covers are hinged to swing longitudinally. Each cover has an individual sliding type of locking bar which serves as a lifting handle when unlocked. Running boards are Apex metal type.

The side sheets, floor sheets, hopper sheets and the longitudinal hood are of ¼-in. material. The bolster web is ⅜-in. and the crossbearer webs are 5/16-in. material. Roof sheets are ⅛-in. thick.

WEIGHTS AND PRINCIPAL DIMENSIONS OF THE A.C.L. 70-TON COVERED HOPPER CARS

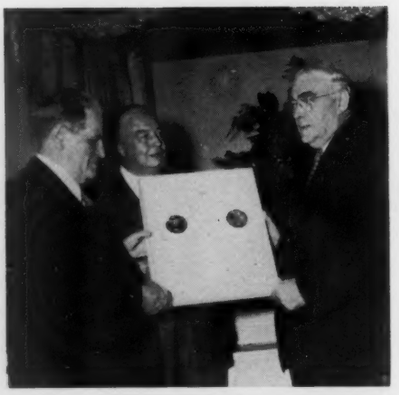
Light weight of the car body, lb. (approx.)	34,600
Light weight of trucks, lb. (approx.)	16,400
Light weight of the car, lb. (approx.)	51,000
Cubic capacity loaded to eaves, cu. ft.	1,970
Length over strikers, ft.-in.	37—6
Width overall, ft.-in.	10—2⅞
Width over eaves, ft.-in.	9—8⅞
Height, rail to top of running board, ft.-in.	10—9
Truck wheel base, ft.-in.	5—8

The Trucks

The trucks are of the spring-plankless, spring-plateless type using Barber S-2-A-0 stabilizer parts with 2½-in. travel bolster springs and are equipped with Timken cartridge-type journal roller bearings.

The side frames have integral journal boxes for 6-in. by 11-in. journals. The dust-guard retainer walls at the back of the box have been omitted and an opening cored through the front end wall under the lid. This permits the boxes to be slipped over the roller-bearing enclosures on the ends of the axles, with wedges in place, until the box lug encounters the shoulder at the back of the enclosure. To permit the box to pass over the bearing enclosure the outer bearing races are of smaller diameter than the inner. The bearing enclosures are sealed at the rear with a wiping grease retainer and at the front with a bolted cover which has an inspection plug near the bottom and a grease fitting at the top. In the center of the cover is a small breather fixture. The cars have 33-in. one-wear steel wheels, Stucki single-roller side bearings, and Unit brake beams. Springs were furnished by the Standard Steel Works Division of Baldwin-Lima-Hamilton Corporation.

The couplers are 6¼-in. by 8-in. rigid shank, Type E, with Standard Safety rotary bottom-operated uncoupling device. Half the cars have Miner A-22-XL draft gears and half Cardwell-Westinghouse NY-11-F. The AB brake with 10-in. cylinders was furnished by Westinghouse. The pipe fittings include flanged reinforced unions. Hand brakes were supplied by three manufacturers: National, Miner and Universal.



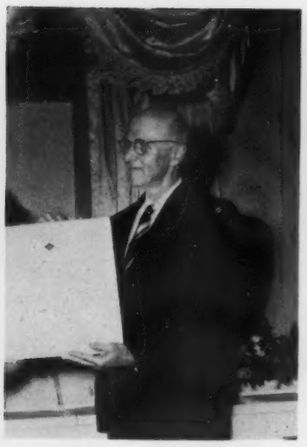
Above—P. J. Lynch (third from left), vice-president, operations, of the Union Pacific, accepting that road's gold medal from E. G. Plowman (second from left), vice-president, traffic, United States Steel Company and a member of the award committee of the American Museum of Safety. Looking on are: (Right), F. B. Lewis, U.P. superintendent of safety, and Reginald M. Cleveland, president of the museum. Above right —Interstate Commerce Commissioner William J. Patterson (left), a member of the award committee, hands Harry Babcock (right), general manager, Pennsylvania-Reading Seashore Lines, the gold medal won by that road, as Mr. Cleveland watches. Right—James H. Smith (right), superintendent of the Cambria & Indiana, which won a gold medal, being congraulated by Mr. Cleveland (left). James G. Lyne, editor of *Railway Age* and chairman of the award committee, looks on

Railroads Receive Harriman Awards For 1950 Safety Performances

Railroad employees in 1950 experienced one of their safest years in history," R. W. Brown, chairman of the executive committee of the Reading, said in a September 20 address at the 32nd annual Harriman Award dinner at the Hotel Ambassador, New York. "The employee fatality rate per million man-hours worked was the lowest on record," he added, "while the injury rate was the second lowest in the past ten years. Since I learned my first safety lesson nearly fifty years ago, tremendous strides have been made in accident prevention," Mr. Brown told the assembled award winners and guests. "Sometimes I think we devote too much time to statistics, but I know of no other gage to determine our performance. If we interpret statistics as human equations and consider them in terms of flesh and blood rather than numerical ratios, I believe the interpretation of undramatic figures will become a vital and more helpful substance."

Reginald M. Cleveland, president of the American Museum of Safety, presided at the dinner and introduced James G. Lyne, editor of *Railway Age* and chairman of the museum's committee of award, who presented the awards to the various winners. In addition to Mr. Lyne, members of the award committee are Interstate Commerce Commissioner William J. Patterson; Robert S. Henry, vice-president, Association of American Railroads; J. M. Fitzgerald, vice-chairman, committee on public relations, Eastern Railroad Presidents Conference; Alvin B. Barber of the Defense Production Administration; and E. G. Plowman, vice-president, traffic, United States Steel Company.

The Union Pacific received this year's gold medal for Class A railroads. P. J. Lynch, vice-president, operations, accepted the award from Mr. Lyne. Harry Babcock, general manager of the Pennsylvania-Reading Seashore Lines, accepted the gold medal awarded to that road for having had the best safety record among Class B railroads. The gold medal for the best record among Class C railroads was presented to the Cambria & Indiana, whose superintendent, James H. Smith, accepted it. (Class A railroads are those operating 10,000,000 or more locomotive-miles annually; Class B roads operate less than 10,000,000 but more than 1,000,000 locomotive-



Above left—W. H. McKitrick (left), superintendent of the Indianapolis Union; and Mr. Cleveland. Above right— F. C. Kronauer, general manager of the New York, Susquehanna & Western, with the certificate awarded to that road

Above left—Arthur V. Rohweder (right), superintendent of safety and welfare, Duluth, Missabe & Iron Range; and Mr. Lyne. Above right—R. M. Markland, assistant to vice-president, Chesapeake & Ohio, holding the C. & O.'s certificate

Left—R. W. Brown (right), chairman of the Reading's executive committee, accepting that road's certificate of commendation from Mr. Patterson (left). Mr. Cleveland is in the middle

Far left—J. R. Tenney (left), the Western Maryland's superintendent of safety; and Paul F. Stricker, managing director of the museum

miles each year; and Class C roads are those operating under 1,000,000 locomotive-miles a year).

Certificates of commendation were awarded to nine additional railroads and two switching and terminal companies, as follows: In the Eastern district—Reading (Class A), accepted by Mr. Brown; Western Maryland (Class B), accepted by John R. Tenney, superintendent of safety; and New York, Susquehanna & Western (Class C), accepted by F. C. Kronauer, general manager; Western district—Missouri-Kansas-Texas (Class A), accepted by D. V. Fraser, president; Duluth, Missabe & Iron Range (Class B), accepted by Arthur V. Rohweder, superintendent of safety and welfare; and Colorado & Wyoming (Class C), accepted by Ward Wire, vice-president and general manager; Southern district—Chesapeake & Ohio (Class A), accepted by R. M. Markland, assistant to vice-president; Gulf, Mobile & Ohio (Class B), accepted by C. M. House, general superintendent, motive power and car equipment; and Tennessee Central (Class C), accepted by J. L. Armstrong, vice-president.

C. F. Wiegele, general manager, New York Central system, received the award presented to the Cleveland Union Terminals (Group ST-1), and W. H. McKitrick, superintendent, Indianapolis Union (Group ST-2), accepted the certificate of commendation won by that company. (Switching and terminal companies in Group ST-1 are those reporting 2,500,000 or more man-hours of work a year, while Group ST-2 includes those reporting less than 2,500,000 man-hours annually).

A personal safety award, the Arthur Williams Memorial Medal, was presented by Julien H. Harvey, chairman of the Arthur Williams award committee, to Rudolph F. King, registrar of motor vehicles, commonwealth of Massachusetts.

Mr. Lyne, before making the official presentations, said it had been suggested to the award committee that some method be devised to recognize and suitably award safety work performed by rank-and-file railroad employees. "The committee," he added, "has been aware of the need and value of recognizing the extremely laudable and indispensable work of men in the ranks. So far, however, no practicable method has been devised by, or suggested to, the committee." Mr. Lyne requested that all ideas on the subject be forwarded to the committee.

"One out of every fifteen deaths in the United States results from an accident," Mr. Brown said in his address. "The annual toll amounts to more than 90,000 fatalities,

Left—In the usual order: Mr. Cleveland; D. V. Fraser, president of the Missouri-Kansas-Texas; and B. A. McDonald, M-K-T superintendent, rules-safety. Center—Alvin B. Barber (left), of the Defense Production Administration and a member of the award committee, and Ward Wire, vice-president and general manager of the Colorado & Wyoming, with the certificate awarded that road. Right—Mr. Cleveland (left), congratulating C. M. House, general superintendent, motive power and car equipment, of the Gulf, Mobile & Ohio, which also was awarded a certificate

Far left—J. L. Armstrong (left), vice-president of the Tennessee Central; G. M. Kevlin (center), the road's general counsel, and Col. Barber

Left—C. F. Wiegele (center), general manager, lines west, of the New York Central, and W. H. Leahy, superintendent of the Central's Cleveland division, holding the certificate awarded to the Cleveland Union Terminals. Mr. Cleveland is at the left

9,500,000 non-fatal injuries and billions of dollars of economic loss. Large as these figures are, they would be even greater had it not been for the increasing attention and effort given to accident reduction work in recent years by American industry, public authorities and private citizens. For example, if the accidental death rate per 100,000 population had been the same last year as it was 15 years ago, there would have been in that year alone 25,000 more fatalities from accidents than actually occurred.

"Fifty years ago, at the turn of the century, one out of every seven accidental deaths in the United States resulted from a railroad accident. Today, the railroad ratio is only about one out of every 30 accidental deaths. In 1950, notwithstanding the fact that railroads performed more than four times as much freight service and nearly twice as much passenger service as in 1900, fatalities resulting from railroad accidents of all kinds were 56 per cent less and non-fatal injuries were 34 per cent less. Excluding highway grade-crossing accidents, the reduction in railroad fatalities between 1900 and 1950 was 73 per cent."

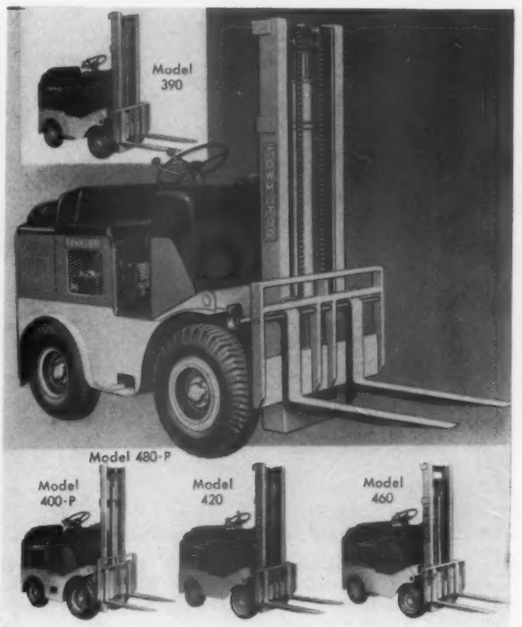
When measured against the high performance standards achieved in previous years, the statistical record of railroad passenger casualties in 1950 was one of the poorest and most tragic in recent years, Mr. Brown continued. However, he pointed out, analysis of the causes of the three serious collisions of passenger trains responsible for that showing indicates they resulted from circumstances beyond control of railroad management. In each instance, protective devices provided by the railroads were functioning properly, but danger signals were ignored by train personnel.

"Once before I called the attention of this gathering to the fact that the machine is safer than the man," the Reading officer said. "This continued to be the case during 1940-44, when equipment defects were responsible for only 28 per cent of accidents, compared with 45 per cent due to human failure. From 1945 to 1949 human failure was responsible for 41 per cent, yet mechanical failures in the last four years jumped to 32 per cent of the train-accident ratio. Thus, within the last four years we find this astonishing result: A 4 per cent decrease in human failures and a 4 per cent increase in mechanical failures. Motive power and train service people can give you plenty of excuses for the increase in mechanical deficiency, but I can tell you that the improvement in human behavior has been due to our safety work."

New and Improved Products of the Manufacturers

FIVE NEW MODELS ANNOUNCED BY TOWMOTOR

The Towmotor Corporation, Cleveland, Ohio, has announced the addition of five new fork lift trucks to its line. Three of the new models, replacing three models formerly produced, have solid, or cushion tires and a shorter wheelbase for greater maneuverability. The other two new models feature pneumatic tires on all wheels thus bringing to three the number of Towmotor models so equipped.



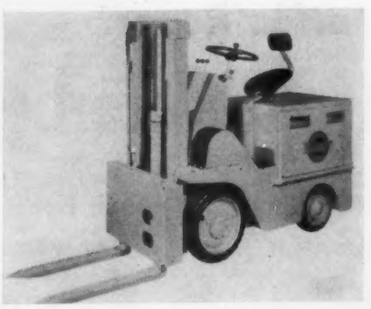
The five new Towmotors: Model 480-P with 48-in. wheelbase and a capacity of 4,000 lb. at 24-in. load center. Large pneumatic tires permit rapid movement of loads over rough surfaces, indoors and out. Model 390 has a 39-in. wheelbase and a capacity of 3,000-lb. at 15-in. load center. Model 400-P has a 40-in. wheelbase and a 2,000-lb. capacity at 24-in. load center. Like the 480-P, it is equipped with pneumatic tires. Model 420 has a 42-in. wheelbase and a capacity of 4,000-lb. at 15-in. load center. Model 460 has a 46-in. wheelbase and 4,000-lb. capacity at 24-in. load center

A self-centering rotating clamp, which can be applied to its gas and electric-powered fork lift trucks, has been put on the market by the Philadelphia Division, Yale & Towne Manufacturing Co., Philadelphia 15, Pa. The clamp will handle loads up to 6,000 lb. Inside opening range of the clamps is from the 17 in. minimum to a maximum of 66 in.

BRUNING OFFICE-SIZE WHITE PRINTER

A new office-size white printer, which uses the Diazo process, just as do the larger Bruning machines, was announced recently by the Charles Bruning Company, New York 13. Known as the BW Copyflex, this machine accomplishes the entire copying process within itself. The manufacturer states that, without adjustment, the machine copies original matter of any length and up to 11½ in. wide.

The BW Copyflex can be placed anywhere in an office and operates on standard 60 cycle, 110 volt alternating current. Dimensions are 29½ in. wide, 28 in. deep, and 50 in. high.

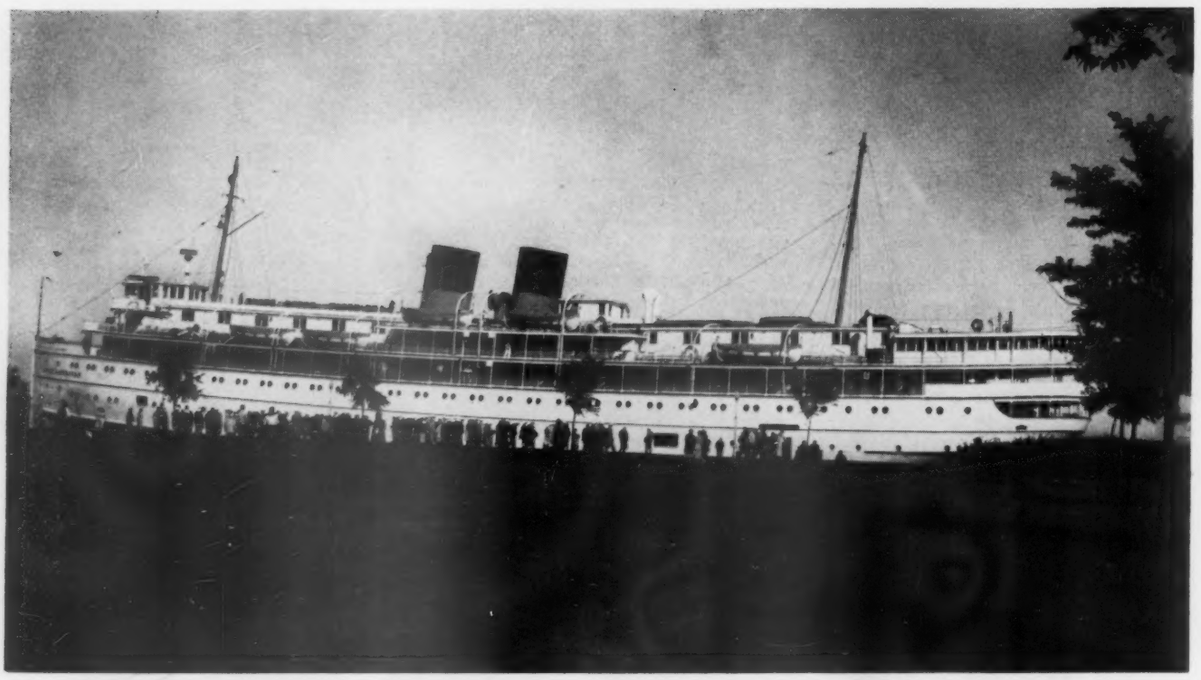


FOUR-PURPOSE CARRIAGE FOR FORK TRUCK

A special lift carriage assembly, developed by the Baker Industrial Truck Division of the Baker-Raulang Company, Cleveland 2, Ohio, is said by the manufacturer to make a 2,000-4,000 lb. capacity fork truck a "multi-purpose handling machine." From one adjustment it functions as a standard fork truck for pallet and ordinary fork truck handling, or as a clamp truck for handling drums, cartons, skid boxes, etc., and as a fork spacer permitting the handling of varying widths of pallets, skids or other loads. A change in the adjustment converts it into a side-shifting fork truck. The time required to make the change is said to be less than a minute, and no tools are necessary.

Available in 36-in., 42-in. and 48-in. outside fork spread, it provides 17 inches of fork-spacer and clamp action and as a side-shifter provides 4¼ inches lateral movement each way from the center.

A porcelain enamel train bulletin board, available in various combinations of colors, with the porcelain burnt onto 18 gage steel, is a product of the Bettinger Enamel Corporation, Waltham, Mass. The face of the board has a rough mat surface as the writing base for chalk. All lines and set-schedule trains and their destinations are in white enamel, permanently fused to the board at the time of its fabrication



The 2,662-ton "S. S. South American," of the Chicago, Duluth & Georgian Bay Transit Co., was the locale of the four-day 1951 annual meeting of the passenger traffic men, as she cruised between Detroit and Chicago. Ship and party are here shown docked at Escanaba, Mich., for one of the several brief stops on the trip

A Railway Age Convention Report

Passenger Men Hold Waterborne Convention

Probe air competition, future of Pullman, new book tickets and military travel, while aboard a Great Lakes vessel

The first convention held entirely on board ship in the 97-year history of one of the most venerable associations in the railroad business brought together almost 200 members and guests of the American Association of Passenger Traffic Officers, September 15-19, inclusive. Traffic officers of North American passenger-carrying water lines have long been members of the association, since the days when many railroads operated navigation subsidiaries or entered into joint rates and routes with the water lines. President E. J. Goebel played host for the meeting, with a full four-day program aboard the "South American" of the Chicago, Duluth & Georgian Bay Transit Co., of which he is executive vice-president and passenger traffic manager. The route taken by the Great Lakes vessel was from Detroit to Chicago, calling at the Soo locks, Mackinac Island, Mich., and Escanaba.

Subjects on the docket of this 88th annual meeting of the association included a discussion of the new book-form interline ticket; presentation of a detailed study of the traffic prospects for the Pullman Company; an air line president's review of the merchandising techniques of his industry; and an explanation of the role and principles of the new overall transportation organization of the armed forces.

Elected for the forthcoming year were: President, E. G. Baker, general traffic manager, Frisco; vice-president, J. F. Whittington, general passenger traffic manager, Baltimore & Ohio; and secretary-treasurer (re-elected), B. D. Branch, retired general passenger agent, Central of New Jersey. C. E. Peterson, vice-president—system passenger traffic, Southern Pacific lines, was appointed chairman of the executive committee. Members named to fill vacancies on the committee were: J. Finley, vice-president, Furness-Bermuda Line; Harold Eno, passenger traffic manager, Denver & Rio Grande Western; and J. L. Binckley, general passenger agent, Canadian National.

An explanation of the manner in which the procurement of transportation by the three armed services is organized was presented to the passenger men by Kenneth L. Vore, director of the Military Traffic Service,

Left to right—Presiding over the meeting was Retiring President E. J. Goebel, executive vice-president of the Georgian Bay Line. Newly elected officers of the A.A.P.T.O. are: *(left)* President, E. G. Baker, general traffic manager, Frisco; *(middle)* Vice-President, J. F. Whittington, general passenger traffic manager, Baltimore & Ohio; *(right)* chairman of executive committee, C. E. Peterson, vice-president-system passenger traffic, Southern Pacific

U. S. Department of Defense. The speaker, whose entire career has been with private enterprise prior to his current "tour" with the government, emphasized the determination of his office to keep staff at a minimum, limited to highly trained technicians in such fields as rates, statistics and law—supplemented by temporary consultants chosen from transportation companies, industry and universities.

Mr. Vore reminded his audience that the policies of M.T.S. had been set forth effective November 15, 1950, to serve "as guideposts for the general direction of the military departments in all traffic matters within the scope of the military service." In his belief, "the public issuance of such comprehensive policies is something new in the field of traffic management." In addition to regularizing military transportation activities, the M.T.S. has entered into cooperative arrangements with other agencies for more effective traffic management. For example, it maintained close working arrangements with the Munitions Board, in the Department of Defense, the agency planning for future transportation requirements of the military services.

Similar close relationships are maintained with the joint military transportation committee of the Joint Chiefs of Staff. Duplication of agencies with which the carriers have had to deal in the past will be diminished, as a result of an agreement between the secretary of defense and the administrator of general services which delineates the "areas of sole responsibility" in traffic management for the military and non-military agencies, respectively plus "the areas which are made subject to joint action." Closer cooperation with government's General Accounting Office is now a major concern of M.T.S.—a fact which may (as Mr. Vore stated later in answer to a question from the floor) remedy some of the tardiness with which carrier bills have been settled in the past.

The M.T.S. director emphasized that his office is one of policy-setting; that implementation is the responsibility of the separate traffic management organizations of the three military branches. "The Department of the Army operates in a centralized manner from headquarters in Washington, D. C. The Department of the Navy operates in a more decentralized fashion. The Department of the Air Force is, in effect, a combination of these two systems, in that policy is established at the Washington headquarters, while the operational responsibility rests with the Air Materiel Command at Dayton, Ohio."

Policy decisions made by the M.T.S. director are arrived at as a result of presentations by his staff or by any military department, after consideration by an Advisory Council, comprising representatives of the Munitions Board and each of the three military branches. with the M.T.S. director as chairman. The council meets regularly "at least every two weeks," at which time agenda items which have been furnished in advance to members are discussed. There is no voting; decisions are made by the chairman. In addition to this council, the director has the assistance of three industry advisory committees—dealing with traffic matters, rates and rate negotiation, and loading rules, respectively.

Mr. Vore expressed his aim as that of "establishing sound traffic management principles in the defense departments. In dealing with war emergency, he declared, the government ought to call in industry and say, "This is our problem; can you solve it? We'll help you."

What of Pullman?

A summary of the findings of 11 months' intensive investigation by the management engineering firm of Robert Heller & Associates of the operations and prospects of the Pullman Company was presented by Laurence T. Mayher, vice-president of the former, assisted by his associate John P. Coan. Titling his remarks, "The Future of the Sleeping Car Business," the speaker said the results of a study of traffic data, plus analysis of the travel preferences of a wide sample of the public, indicated clearly that there is a substantial portion of the first-class travel market which the railroads can hold, because of inherent advantages—but only if more attention is given to the public's expressed wants, in terms of service, than is now the case.

He set forth frank opinions of the service defects in sleeping car operation, emphasizing that they were based on what the public says it likes and dislikes. He went on to suggest ways—some of them "radical"—in which the railroads can make wider use of the Pullman organization which, jointly, they own. He also suggested means by which the Pullman deficit can be reduced. [Since Mr. Mayher's talk was in effect a "prevue" of a detailed study still under way, complete understanding of which requires the reproduction of charts and other data comparisons, more detailed presentation must await publication in the future.—EDITOR]

How the air lines overcame three obstacles to profit-

able patronage—fear of air accidents, reluctance of women to use air, and violent seasonal fluctuations in travel—comprised the major portion of an address by, and read on behalf of, William A. Patterson, president of United Air Lines, who was unable to join the convention as originally scheduled. The air lines, he pointed out, had not only to deal with problems which were "ancient history" to other forms of transport, but, as well, brand-new ones arising from their use of a new medium of movement—the air. Reviewing the 25-year history of his concern, he could say truthfully that "from the very beginning, people in air transport have been sales-minded." For example, in the pioneer days, technicians and operating personnel had to sell stock to the public in order to build their jobs. "They would work on the planes one day, and pound the pavements with stock certificates the next."

Introduction of hostesses, beginning in 1930, had an important psychological effect on women travelers, who had not only resisted air travel for themselves, but often kept their husbands grounded. The "free wives deal" also broke down resistance by the sex. Today one third of air passengers are women. The former problem of profitable traffic in the summer offset by low traffic in winter was solved by the introduction of navigation aids and better flying techniques. But even these had to be merchandised; in advertising for the past two years, United "has taken the public behind the scenes of operation" to tell the story of new, all-weather reliability of air travel, according to Mr. Patterson.

The New Book Tickets

Earl B. Padrick, chairman of the Western and Transcontinental Passenger Associations, reported on experimentation to date with entirely new forms of interline tickets by the Milwaukee, Union Pacific, Seaboard, and Western Pacific. (Described and illustrated in *Railway Age*, July 30, page 26.) Some of the roads used "precarbonized" book forms, while the Seaboard tried snap-out carbons. The forms of the Milwaukee and Western Pacific list the successive participating roads' routes vertically, while the other two read horizontally. The W.P. has added an auditor's coupon.

A committee representing the several territorial passenger associations, at a meeting on July 17, 1951, unanimously recommended that experiments with the new type tickets be continued, with a view especially toward better carbonization, and use of the tickets in connection with ticket printing and dispensing machines. While it was recognized that "uniformity in the printing of interline tickets has never existed," nevertheless the committee recommended that, after an additional period of experimentation, "endeavor should be made to achieve uniformity to the extent possible with these book types of tickets." While recognizing that railroads would continue to show individuality in printing their tickets, "for purposes of accounting, it is most desirable that the new experimental tickets be uniform in size; that the reading matter be placed on the tickets in the same general way, and that the form and number of the tickets appear in the same place."

The formation and aims of a joint subcommittee, traffic-accounting, under the aegis of the Association of American Railroads, on simplification of passenger tariffs and passenger fare division publications, were summarized by A. G. Hilker, chairman of the group, and general passenger agent of the Union Pacific, Omaha. The committee consists of both passenger traffic and accounting officers from representative roads in each of the three territories, with E. H. Bunnell, vice-president (finance) and W. J. Kelly, vice-president (traffic) of the A.A.R. as members *ex officio*. It was explained that, since local tariffs are the foundation of routes, fares and divisions, it should be the aim of the railroads to weed out "dead material"—i.e., information based on non-service routes. Continuance of these non-service routes accounts for much unnecessary bulk in publication. Thus, in one tariff under study, dropping of dead material alone would reduce pages from about 80 to 30, at a saving in printing cost alone of $1,000. Also, since these tariffs are the guides for ticket clerks, passengers are inconvenienced by erroneous routing over non-service routes. Finally, the carriers lose revenues from use of non-service routes as a rate basis, where service routes are longer.

Travel Markets

Four suggestions to the railroads for ways in which to increase, or level out seasonal curves in, travel were set forth in an address by Edward C. Von Tress of Holiday magazine:

(1) Join other interests in cooperative advertising—such as joint efforts with resorts in particular regions.

(2) Spread travel throughout the year with incentive advertising and rates.

(3) Promote occupancy of big city hotels over now-slack week-ends by encouraging travel of wives with businessmen husbands on official business.

(4) Spread knowledge of advantages of rental of autos at destination; show people how to get the best out of each form of transport, by using rail for the long haul and auto "when you get there."

The speaker summarized the findings of the second survey made by Holiday of vacation travel, based on records kept by a selected panel of families representing a range of classes of income, location, race and religion. With "vacation travel" defined as that of three days or more, the survey found that:

54.2 per cent of the families took vacation trips in a year
Each family took 1.6 trips
Each trip averaged 10.9 days
2.3 persons per family went on each trip

The seasonal pattern of vacation travel is flattening out somewhat, said Mr. Von Tress, who is convinced that travel habits can be changed by promotion and the provision of services.

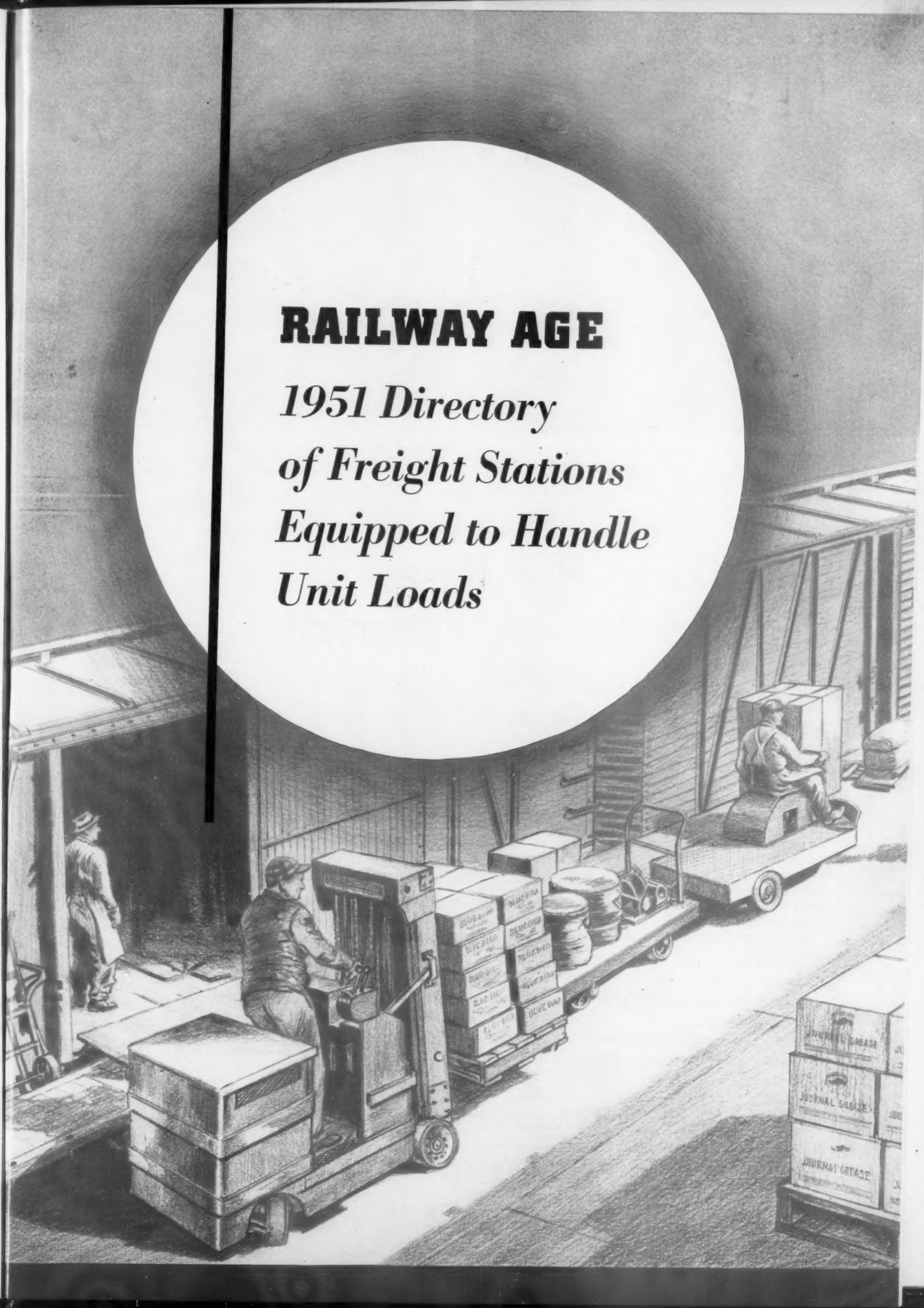
A. L. Simmons, president of the American Society of Travel Agents, appealed to the passenger men for provision of commissions to authorized, producing travel agents on all rail travel sold, including Pullman charges. He said the agents were "grateful" for the present Rail Travel Promotion plan—which allows 10 per cent commission on all-expense "package" tours—even with the "unfortunate" season and geographical exceptions contained in it, but characterized this arrangement as "first base" only. He said that the success of many great industries—like automobile manufacturing—is based on the use of outside sales agencies. He appreciated that a formula for payment to agents for all travel to all points by all transportation companies is difficult to produce; what he wants is "agreement to the principle."

Mr. Simmons laid particular stress on the fact that, at present, travel agencies are encouraged to route people by the air lines—which pay commissions on straight business—rather than by rail. Pay commissions, he said, and "appoint this group of established travel agents as your ticket sellers."

Other speakers at the convention were William A. Lucking, president of the host steamship company; W. S. Woodfill, president of the Grand Hotel, Mackinac Island; and Leonard Hicks, vice-president and managing director, Congress Hotel, Chicago.

RAILWAY AGE

1951 Directory of Freight Stations Equipped to Handle Unit Loads



A fork truck is useful for handling heavy and bulky pieces of freight at the Pennsylvania's Federal street station in Philadelphia. In the background at left can be seen a scale for weighing shipments and trailers loaded with oil drums

Part of the platform at the Canadian National's new St. Bonaventure station at Montreal, with a portion of the city's skyline in the background. Bonaventure is equipped with fork lift trucks and tractor-trailer trains

894 Stations Now Have Unit-Load Handling Equipment

Since *Railway Age* first published (May 15, 1948) the list of railroad freight stations, transfers and piers at which the carriers have equipment available for handling unit loads, the number of such installations has grown by 85 per cent, the growth since the last such list was published (May 20, 1950) being 9.4 per cent. Particularly noticeable is the increasing use of the more versatile fork lift equipment rather than the platform type. Only about 13 per cent of the stations added during the past year and a half, to complete the 1951 listing, were equipped with platform lift trucks. As a result, the ratio of platform lift trucks to the total number of stations having unit-load handling equipment has been reduced one percentage point.

At present 78 per cent of the stations listed are equipped with fork lift equipment, either powered or hand-hydraulic. Many stations, of course, have both fork and platform lift equipment.

This list of stations equipped to handle unit loads by no means represents the sum and substance of the railroads' efforts to economize freight handling through mechanization, for the railroads also have at many of the stations on this list tractor-trailer trains, hoists, cranes (automatic and overhead), and, at a few stations, tow-chain conveyors. Recent installations of this latter type which have been described in articles in *Railway Age* are those of the: Texas & New Orleans at Houston, Tex.; Boston & Maine at Gardner, Mass.; Chicago, Milwaukee, St. Paul & Pacific at Galewood, Ill.; and Chicago, Burlington & Quincy at Chicago.

Station	Railroad	Max. Capy* Lb.
ALABAMA		
Birmingham	L. & N.	4,000
	St. L.-S. F.	
	S. A. L. (p)*	2,000
	Sou.	2,000
Florence	Sou.	2,000
Mobile	G. M. & O.	5,000
	L. & N. (p)	6,000
Montgomery	A. & W. P.-W. of A.(p)	4,000
	L. & N. (p)	6,000
ARIZONA		
Phoenix	A. T. & S. F.	4,000
	S. P.	4,000
Tucson	S. P.	4,000
Winslow	A. T. & S. F.	4,000

*(p) denotes platform lift trucks

Station	Railroad	Max. Capy. Lb.
ARKANSAS		
Fort Smith	M. P.	4,000
Jonesboro	St. L. S. W. (p)	4,000
Little Rock	M. P.	6,000
	C. R. I. & P.	2,000
Paragould	St. L. S. W. (p)	4,000
Pine Bluff	St. L. S. W.	2,000
Stuttgart	St. L. S. W. (p)	4,000
Texarkana	St. L. S. W. (p)	4,000
CALIFORNIA		
Alhambra	S. P. (p)	4,000
Auburn	S. P.	4,000
Bakersfield	S. P.	4,000
	A. T. & S. F.	4,000
Barstow	A. T. & S. F.	4,000
Calistoga	S. P. (p)	4,000
Chico	S. P.	4,000

Station	Railroad	Max. Capy. Lb.
Colton	S. P.	4,000
Dunsmuir	S. P.	4,000
El Centro	S. P. (p)	4,000
Eureka	Nw. P.	4,000
Fortuna	Nw. P.	4,000
Fresno	A. T. & S. F.	4,000
	S. P.	4,000
Long Beach	S. P. (p)	4,000
Los Angeles	A. T. & S. F.	4,000
	R. E. A.	4,000
	S. P.	4,000
	U. P.	
Marysville	S. P.	4,000
Modesto	S. P.	4,000
Oakland	A. T. & S. F.	4,000
	S. P.	4,000
	W. P.	2,000
Orland	S. P. (p)	4,000

How the Evans DF Loader saves money for railroads and shippers by delivering capacity loads Damage Free

You lock ladings into box cars both horizontally and vertically with the Evans DF Loader—the Damage Free, Dunnage Free Loader. No makeshift bulkheading, no special bracing is needed. The Evans DF Loader *separates* the load into easily managed units . . . *supports* it wherever necessary . . . *secures* it positively to save an average of $35.40 in damage on every load. Even with the most difficult lading, this all purpose Loader cuts damage to "negligible."

The Evans DF Loader also eliminates dunnage, saving shippers $46.50 on the average car loaded. Because it enables cars to be loaded faster, loaded heavier, turned around quicker, it actually lets two box cars do the work of three. To end costly damage—both to lading and to car floors and walls—specify the Evans DF Loader . . . the Damage Free, Dunnage Free Loader.

Evans Products Company, Railroad Loading & Equipment Division. General Offices: Plymouth, Michigan. Plants: Plymouth, Mich.; Coos Bay, Ore.; Vancouver, B. C.

EVANS LOADING AND RAILROAD EQUIPMENT RETURNS REVENUE TO THE RAILS

Particularly on its Pere Marquette district the Chesapeake & Ohio has much equipment for handling of unit loads. Pallet sizes used by the railroads in handling l.c.l. vary. At Huntington, W. Va., the C. & O. uses a small size pallet

The Erie, at Pier 8 in Jersey City, N. J., sometimes uses a squeeze or clamp attachment on its lift trucks in handling suitable types of freight. The Erie's export-import piers at Weehawken and Jersey City are highly mechanized

Station	Railroad	Max. Capy. Lb.
CALIFORNIA (Cont.)		
Oxnard	S. P.	2,000
Palo Alto	S. P. (p)*	4,000
Pasadena	S. P. (p)	4,000
Petaluma	Nw. P.	4,000
Placerville	S. P.	4,000
Red Bluff	S. P.	4,000
Redding	S. P.	4,000
Riverside	S. P. (p)	4,000
Sacramento	S. P.	4,000
	W. P.	2,000
Salinas	S. P. (p)	4,000
San Diego	A. T. & S. F.	4,000
San Francisco	A. T. & S. F.	4,000
	R. E. A.	4,000
	S. P.	4,000
	W. P.	6,000
(Pier 3)	Nw. P.	4,000
San Jose	S. P.	4,000
	W. P.	2,000
San Luis Obispo	S. P. (p)	3,500
San Rafael	Nw. P.	4,000
Santa Ana	S. P. (p)	4,000
Santa Rosa	Nw. P. (p)	4,000
Sebastopol	Nw. P.	4,000
Stockton	A. T. & S. F.	4,000
	S. P.	4,000
	W. P.	2,000
Suisun-Fairfield	S. P.	4,000
Tracy	S. P.	4,000
Ukiah	Nw. P.	4,000
Vallejo	S. P. (p)	4,000
Ventura	S. P. (p)	3,500
Watsonville	S. P. (p)	3,500
Willits	Nw. P.	4,000
COLORADO		
Denver	A. T. & S. F.	4,000
	C. B. & Q.	4,000
	D. & R. G. W.-C. R. I. & P.	4,000
	R. E. A.	4,000
	U. P.	
La Junta	A. T. & S. F.	4,000
Pueblo	A. T. & S. F.	4,000
	D. & R. G. W.-M. P.	4,000
CONNECTICUT		
Bridgeport	N. Y. N. H. & H.	4,000
	R. E. A.	4,000
Cedar Hill Tfr.	N. Y. N. H. & H.	4,000
Stamford	N. Y. N. H. & H.	2,000
Waterbury	N. Y. N. H. & H.	4,000
DELAWARE		
Wilmington	P. R. R.	4,000
DISTRICT OF COLUMBIA		
Washington	B & O.	6,000
	P. R. R.	3,000
	R. E. A.	4,000

*(p) denotes platform lift trucks

Station	Railroad	Max. Capy. Lb.
FLORIDA		
Gainsville	S. A. L. (p)	4,000
Jacksonville	A. C. L.	2,000
	R. E. A.	4,000
	S. A. L.	4,000
Miami	F. E. C.	4,000
	S. A. L.	2,000
Orlando	A. C. L. (p)	2,000
	S. A. L. (p)	2,000
Pensacola	L. & N. (p)	6,000
St. Petersburg	S. A. L. (p)	2,000
Tallahassee	S. A. L. (p)	2,000
Tampa	A. C. L. (p)	6,000
	S. A. L. (p)	4,000
GEORGIA		
Athens	S. A. L. (p)	2,000
Atlanta	A. & W. P.-Ga.	
	L. & N. (p)	2,000
	A. C. L. (p)	2,000
	C. of Ga. (p)	4,000
	N. C. & St. L.	3,000
	R. E. A.	4,000
	S. A. L.	4,000
	Sou.	2,000
Chamblee	Sou. (p)	4,000
Columbus	C. of Ga.	5,000
	S. A. L. (p)	2,000
Macon	C. of Ga. (p)	4,000
	R. E. A.	4,000
Savannah	A. C. L.	5,000
(piers)	C. of Ga.	6,000
	S. A. L.	2,000
Waycross Tfr.	A. C. L.	2,000
IDAHO		
Boise	U P.	
Pocatello	U. P.	
ILLINOIS		
Bloomington	N. Y. C.	4,000
Champlain	N. Y. C.	4,000
Chicago (Corwith)	A. T. & S. F.	4,000
(Forest Hill)	B. & O.	4,000
(House No. 1)	B. & O.	4,000
(House No. 2)	B. & O.	4,000
	C. & E. I.	8,000
(16th St.)	C. & N. W.	4,000
	C. & O. (C.D.)	4,000
	C. & O. (P.M.)	6,000
	C. B. & Q.	5,000
(Division St.)	C. M. St. P. & P.	2,000
(Union St.)	C. M. St. P. & P.	4,000
(Galewood St.)	C. M. St. P. & P.	4,000
	C. R. I. & P.	4,000
	Erie	6,000
	G. M. & O.	5,000
	G. T. W.	4,000
	I. C.	4,000
(Polk St.)	N. Y. C.	6,000
	N. Y. C. & St. L.	4,000
(Polk St.)	P. R. R.	6,000
(Halstead St.)	P. R. R.	6,000
(18th St.)	P. R. R.	2,000
	R. E. A.	10,000
	Wab.	4,000

Station	Railroad	Max. Capy. Lb.
Chicago Heights	C. & E. I.	6,000
Danville	C. & E. I.	4,000
	N. Y. C.	4,000
Decatur	Wab. (p)	6,000
East St. Louis	B. & O.	5,000
	G. M. & O.	5,000
	I. C.	4,000
	L. & N.	4,000
	N. Y. C.	4,000
	N. Y. C. & St. L.	
	P. R. R.	6,000
	Wab.	4,000
Galesburg	C. B. & Q.	4,000
Harrisburg	N. Y. C.	4,000
Joliet	A. T. & S. F.	4,000
Kankakee	N. Y. C. (p)	4,000
Matoon	N. Y. C. (p)	4,000
Moline	C. B. & Q.	4,000
Morrison	C. & N. W.	2,000
Mt. Carmel	N. Y. C.	4,000
Quincy	C. B. & Q.	4,000
Rock Island	C. R. I. & P. (p)	2,000
Rockford	I. C.	4,000
Shelbyville	N. Y. C.	4,000
Streator	A. T. & S. F.	4,000
INDIANA		
Anderson	N. Y. C.	4,000
	P. R. R.	6,000
Aurora	N. Y. C.	4,000
Batesville	N. Y. C.	4,000
Columbus	N. Y. C.	4,000
Crawfordsville	N. Y. C.	4,000
Elkhart	N. Y. C.	4,000
Evansville	L. & N. (p)	6,000
	N. Y. C.	4,000
Fort Wayne	N. Y. C.	4,000
	N. Y. C. & St. L.	
	P. R. R.	6,000
	Wab. (p)	6,000
Gary	P. R. R.	4,000
Gibson	N. Y. C.	4,000
Goshen	N. Y. C.	4,000
Greensburg	N. Y. C.	4,000
Indianapolis	B. & O.	6,000
	N. Y. C.	4,000
	P. R. R.	6,000
	R. E. A.	4,000
Kokomo	P. R. R.	6,000
Lafayette	N. Y. C.	4,000
LaPorte	N. Y. C.	4,000
Lawrenceburg	N. Y. C.	4,000
Logansport	P. R. R.	4,000
Marion	N. Y. C.	4,000
Michigan City	N. Y. C. & St. L.	
Mishawaka	G. T. W.	4,000
	N. Y. C.	4,000
Muncie	N. Y. C.	4,000
	N. Y. C. & St. L.	
New Castle	N. Y. C.	4,000
Richmond	P. R. R.	6,000
Shelbyville	N. Y. C.	4,000
South Bend	G. T. W.	4,000
	N. Y. C.	4,000
	P. R. R.	4,000
Terre Haute	N. Y. C.	4,000
	P. R. R. (p)	6,000

CLARK gives You what You want

IN GAS-POWERED and ELECTRIC-POWERED
Materials Handling Equipment

1. UNMATCHED QUALITY
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6. UNRIVALLED MANEUVERABILITY AND FLEXIBILITY
7. ECONOMY OF OPERATION AND MAINTENANCE

. . . AT PRICES THAT MAKE SENSE!

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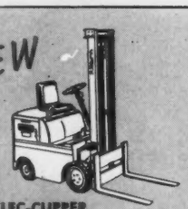
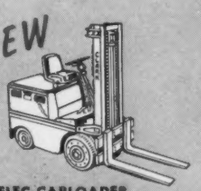
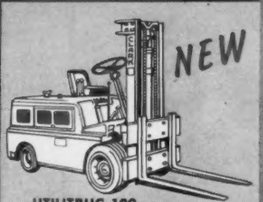
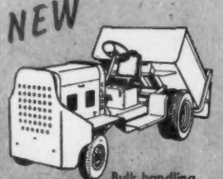
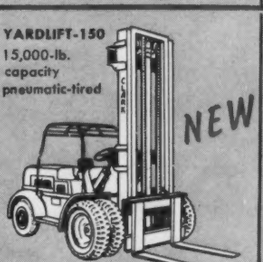
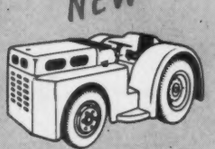
NEW

ELEC-CLIPPER
2,000-lb. capacity

NEW

ELEC-CARLOADER
3, 4, 5,000-lb. capacities

NEW

UTILITRUC-100
10,000-lb. capacity

NEW

Bulk handling
40-cu.-ft. capacity
CLARKTOR DUMP

YARDLIFT-150
15,000-lb. capacity pneumatic-tired
NEW


NEW

CLARKTOR-100
10,000-lb. DPB

CLARK
ELECTRIC AND GAS POWERED
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Firm Name_____
Street _____
City _____ Zone____ State____

A part of the "house set" at the Baltimore & Ohio's Forest Hill (Chicago) station. Forest Hill, equipped with fork trucks, tractor-trailer trains and burden carriers

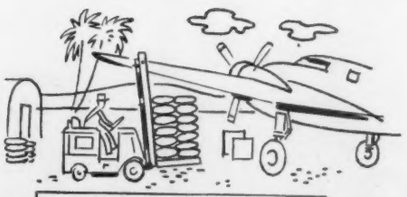
A fairly small station is the Delaware, Lackawanna & Western's Passaic, N. J., freighthouse, but it is equipped with three power fork lift machines

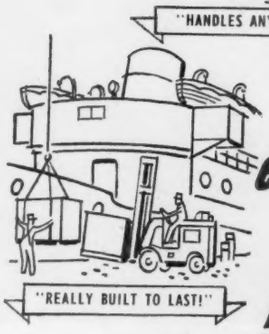
Station	Railroad	Max. Capy. Lb.
INDIANA (Cont.)		
Wabash	N. Y. C.	4,000
Winchester	N. Y. C.	4,000
IOWA		
Cedar Rapids	C. R. I. & P. (p)*	4,000
Davenport	C. R. I. & P.	2,000
Des Moines	C. R. I. & P.	2,000
Fort Madison	A. T. & S. F.	4,000
Sioux City	G. N. (p)	4,000
KANSAS		
Atchison	A. T. & S. F.	4,000
	M. P.	6,000
Dodge City	A. T. & S. F.	4,000
Emporia	A. T. & S. F.	4,000
Garden City	A. T. & S. F.	4,000
Hutchison	A. T. & S. F.	4,000
Newton	A. T. & S. F.	4,000
Salina	U. P. (p)	
Topeka	A. T. & S. F.	4,000
	R. E. A.	4,000
Wichita	A. T. & S. F.	4,000
	C. R. I. & P. (p)	2,000
	M. P.	4,000
KENTUCKY		
Corbin	L. & N. (p)	6,000
Harlan	L. & N. (p)	6,000
Hazard	L. & N. (p)	6,000
Hopkinsville	I. C.	4,000
Lexington	L. & N. (p)	6,000
Louisville	B. & O. (p)	5,000
	L. & N.	4,000
	N. Y. C.	4,000
	P. R. R. (p)	3,000
Paducah	I. C. (p)	4,000
LOUISIANA		
Alexandria	M. P.	6,000
Lafayette	T. & N. O. (p)	2,000
Monroe	M. P.	4,000
New Orleans (Piers)	I. C.	4,000
(Frt. Sta.)	I. C.	2,000
	K. C. S.-L. & A.	4,000
(Piers)	L. & N.	4,000
	M. P.	6,000
	R. E. A.	4,000
	Sou.	2,000
	T. & N. O.	4,000
	T. & P.	4,000
Shreveport	K. C. S.-L. & A.	10,000
	St. L. S. W. (p)	4,000
	T. & P.	2,000
MAINE		
Augusta	M. E. C.	2,000
Bangor	M. E. C.	2,000
Eastport	M. E. C.	2,000
Portland	B. & M.	2,000
	M. E. C.	2,000

*(p) denotes platform lift trucks

Station	Railroad	Max. Capy. Lb.
MARYLAND		
Baltimore		
(Camden Sta.)	B. & O.	6,000
(Canton Sta. Lightrs).	P. R. R.	4,000
(President Sta.)	P. R. R.	3,000
Cumberland	B. & O.	6,000
Hagerstown	P. R. R.	6,000
Locust Point	B. & O.	6,000
Port Covington Term.	W. M.	6,500
MASSACHUSETTS		
Boston	B. & M.	2,000
(Kneeland St.)	N. Y. C. (B. & A.)	6,000
(Piers)	N. Y. N. H. & H.	4,000
	R. E. A.	4,000
Chelsea	B. & M.	2,000
East Cambridge	N. Y. C. (B. & A.)	4,000
Everett	B. & M.	2,000
Fall River	N. Y. N. H. & H.	4,000
Framingham	N. Y. C. (B. & A.)	4,000
Gloucester	B. & M.	2,000
Holyoke	B. & M.	2,000
Ipswich	B. & M.	2,000
Lawrence	B. & M.	2,000
Lynn	B. & M.	2,000
Malden	B. & M.	2,000
North Grafton	N. Y. C. (B. & A.)	4,000
Palmer	N. Y. C. (B. & A.)	4,000
Pittsfield	N. Y. C. (B. & A.) (p)	4,000
Salem	B. & M.	2,000
Springfield	N. Y. C. (B. & A.)	4,000
	N. Y. N. H. & H.	4,000
Waltham	B. & M.	2,000
Watertown	B. & M.	2,000
West Brookfield	N. Y. C. (B. & A.)	4,000
Worcester	N. Y. C. (B. & A.)	4,000
	N. Y. N. H. & H.	4,000
MICHIGAN		
Adrian	N. Y. C.	4,000
Alma	C. & O. (P. M.)	6,000
Ann Arbor	N. Y. C. (p)	4,000
Battle Creek	N. Y. C.	3,500
	G. T. W.	4,000
Bay City	N. Y. C.	4,000
	C. & O. (P.M.)	6,000
Big Rapids	P. R. R.	6,000
Cadillac	P. R. R.	6,000
Detroit	C. & O. (P.M.)	6,000
	G. T. W.	4,000
	N. Y. C.	6,000
	P. R. R.	4,000
	R. E. A.	6,000
	Wab.	6,000
Durand	G. T. W.	4,000
Flint	C. & O. (P.M.)	6,000
	G. T. W.	4,000
Grand Rapids	C. & O. (P.M.)	6,000
	G. T. W.	4,000
	N. Y. C.	4,000
	P. R. R.	6,000
Iona	G. T. W.	4,000
Jackson	N. Y. C.	4,000
Kalamazoo	G. T. W.	4,000
	N. Y. C. (p)	4,000
	P. R. R.	5,000

Station	Railroad	Max. Capy. Lb.
Lansing	C. & O. (P.M.)	6,000
	G. T. W.	4,000
	N. Y. C.	4,000
Ludington	C. & O. (P.M.)	6,000
Marquette	D. S. S. & A.	3,000
Monroe	N. Y. C.	4,000
Mt. Clemens	G. T. W.	4,000
Muskegon	C. & O. (P.M.)	6,000
	G. T. W.	4,000
Niles	N. Y. C.	4,000
Owosso	G. T. W.	4,000
	N. Y. C.	4,000
Petoskey	P. R. R.	6,000
Port Huron	G. T. W.	4,000
Saginaw	C. & O. (P.M.)	6,000
	G. T. W.	4,000
	N. Y. C.	4,000
St. John's	G. T. W.	4,000
Sault Ste. Marie	D. S. S. & A. (p)	1,000
Sturgis	N. Y. C. (p)	4,000
	P. R. R.	6,000
Traverse City	C. & O. (P.M.)	6,000
	P. R. R.	6,000
Wyandotte	N. Y. C.	4,000
MINNESOTA		
Duluth	N. P.	4,000
Minneapolis	C. M. St. P. & P.	4,000
	G. N.	2,000
	N. P.	4,000
	R. E. A.	4,000
St. Cloud	G. N.	2,000
St. Paul (Sibley St.)	C. M. St. P. & P.	4,000
(Prior Ave.)	C. M. St. P. & P.	4,000
	C. R. I. & P.	2,000
	G. N.	2,000
	N. P.	4,000
	R. E. A.	4,000
Willmar	G. N. (p)	4,000
MISSISSIPPI		
Artesia	G. M. & O. (p)	2,500
Jackson	I. C.	2,000
Meridian	G. M. & O. (p)	8,000
MISSOURI		
Jefferson City	M. P.	6,000
Joplin	St. L.-S. F.	
Kansas City	A. T. & S. F.	4,000
	C. B. & Q.	5,000
	C. R. I. & P.	4,000
	M. P.	6,000
	R. E. A.	4,000
	St. L-S. F.	
	U. P.	
	Wab. (p)	6,000
St. Joseph	C. B. & Q.	4,000
St. Louis (Broadway)	C. & E. I.	8,000
	C. B. & Q.	5,000
	C. R. I. & P.	2,000
	Ill. Term. (p)	
(Broadway)	L. & N. (p)	6,000
(3 stations)	M. P.	4,000
	M-K-T	4,000
	R. E. A.	6,000





handling experts everywhere are talking about the NEW TOWMOTORS!

Model 480-P, one of five New Towmotors which include many new engineering features.

No wonder the new TOWMOTORS are such a sensation . . . just look at these features:

- **Extra heavy duty frame**
- **Drop forge beam steering axle**
- **Functionally styled cowl**
- **Full vision instrument panel**
- **Precision controls in easy reach**
- **Super-strength forks**
- **Maximum free lift**
- **Engineered tire equipment**
- **Double universal joint**
- **Precision mast construction**
- **Maximum operating comfort**
- **Heavy duty hydraulic brakes**
- **One piece drive axle assembly**
- **Heavy, industrial-type engines**

Get the facts—see the new Towmotor 15-minute film, "What Makes It Tick?"

TOWMOTOR
THE ONE-MAN-GANG®

FORK LIFT TRUCKS and TRACTORS

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

TOWMOTOR CORPORATION, Div. 21
1226 E. 152nd St., Cleveland 10, Ohio

☐ Send me more information on the new Towmotor.
☐ I'd like to see the new film, "What Makes It Tick?"

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

HOW MANY PEOPLE HAVE YOU TALKED TO ABOUT AMERICANISM TODAY?

In the past two years a number of stations have been equipped with tow-chain conveyors, generally in addition to fork trucks. This conveyor is in use at the Boston & Maine's freighthouse at Gardner, Mass., a large furniture producing center

At its Place Viger freighthouse in Montreal the Canadian Pacific, in addition to using regular fork lift machines, handles a lot of paper with lift trucks equipped with special clamps for handling rolls

Station	Railroad	Max. Capy. Lb.
MISSOURI (Cont.)		
Broadway; (7th St.)	St. L.-S. F.	
	St. L.-S. F.	
	St. L. S. W.	5,000
	Wab.	4,000
Springfield (Mill St.) (Chase St.)	St. L.-S. F.	
	St. L.-S. F	
MONTANA		
Billings	G. N. (p.)*	4,000
	N. P.	4,000
Butte	N. P.	4,000
Great Falls	G. N.	2,000
Havre	G. N.	2,000
Helena	N. P.	4,000
Missoula	N. P.	4,000
NEBRASKA		
Alliance	C. B. & Q. (p)	2,000
Grand Island	U. P. (p)	
Lincoln	C. B. & Q.	4,000
	U. P. (p)	
North Platte	U. P.	
Omaha	C. B. & Q.	5,000
	C. R. I. & P. (p)	2,000
	M. P.	4,000
	R. E. A.	4,000
	U. P.	
NEVADA		
Las Vegas	U. P. (p)	
Reno	S. P.	4,000
NEW HAMPSHIRE		
Nashua	B. & M.	2,000
NEW MEXICO		
Albuquerque	A. T. & S. F.	4,000
	R. E. A.	4,000
Clovis	A. T. & S. F.	4,000
Las Vegas	A. T. & S. F.	4,000
Santa Fe	A. T. & S. F.	4,000
NEW JERSEY		
Atlantic City	R. E. A.	4,000
Bloomfield	Erie (p)	5,000
Camden	P. R. R.	2,000
Croxton Tfr.	Erie	6,000
Greenville Piers	P. R. R.	6,000
Hoboken City	D. L. & W.	4,000
Hoboken Term. Piers	D. L. & W.	4,000
Jersey City Piers (B. C. E. G. I. and Claremont Term.)	L. V.	4,000
	P. R. R.	5,000
Jersey City (Dock 8)	Erie	3,000
(Pavonia Ave.)	Erie	6,000
(Grand Street)	L. V.	4,000
	N. Y. C.	4,000
	P. R. R.	2,000

*(p) denotes platform lift trucks

Station	Railroad	Max. Capy. Lb.
Newark	D. L. & W.	
	Erie	6,000
	P. R. R.	5,000
New Brunswick	P. R. R.	6,000
Passaic	D. L. & W.	2,000
	Erie	6,000
Paterson	Erie	6,000
Trenton	P. R. R.	3,000
Weehawken Piers	Erie	6,000
	N. Y. C.	6,000
NEW YORK		
Albany	D. & H.	4,000
	N. Y. C.	4,000
Auburn	N. Y. C.	4,000
Batavia	N. Y. C. (p)	4,000
Binghampton	D. L. & W.	4,000
	Erie	6,000
Brockport	N. Y. C.	4,000
Brooklyn (Bushwick) (N. 4th St.)	L. I. (p)	4,000
	P. R. R. (p)	5,000
Buffalo	B. & O.	6,000
	D. L. & W.	4,000
	Erie	6,000
	L. V.	
	N. Y. C.	4,000
	N. Y. C. & St. L.	
	P. R. R. (p)	5,000
	R. E. A.	4,000
	Wab. (p)	6,000
Cobleskill	D. & H.	1,500
Corning	Erie (p)	5,000
	N. Y. C.	4,000
Elmira	D. L. & W.	4,000
	P. R. R. (p)	2,000
Fulton	D. L. & W.	
Glens Falls	D. & H.	4,000
Hornell	Erie	6,000
Hudson	N. Y. C. (p)	4,000
Jamestown	Erie	6,000
Kingston	N. Y. C.	4,000
LeRoy	N. Y. C.	4,000
Little Falls	N. Y. C.	4,000
Lockport	N. Y. C.	4,000
Long Island City	L. I.	2,000
	R. E. A.	4,000
Maybrook	N. Y. N. H. & H.	4,000
Mechanicville	B. & M.	2,000
	D. & H.	6,000
Medina	N. Y. C.	4,000
Mineola-Garden City	L. I. (p)	4,000
Newburgh	N. Y. C.	4,000
New York City		
(Pier 22 North River)	B. & O.	6,000
(Pier 39 N. R.)	B. & O.	5,000
(W. 26th St.)	B. & O. (p)	5,000
(Pier 23 N. R.)	C. N. J.	4,000
(Piers 13-41-68 N. R.)	D. L. & W.	4,000
(Pier 26 E. River)	D. L. & W.	4,000
(Pier 48 N. R.)	Erie	3,500
(Pier 19 N. R.)	Erie	3,500
(Piers 20 and 21 North River)	Erie	3,500
(W. 28th St.)	Erie	6,000
(Piers 8 and 38, North River)	L. V.	4,000

Station	Railroad	Max. Capy. Lb.
(Pier 44, East River)	L. V.	4,000
(Term.-E. 34th St. and East River)	L. V.	4,000
(Export Piers)	N. Y. N. H. & H.	4,000
(Pier 34, E. R.)	N. Y. C.	6,000
(Barclay St.)	N. Y. C.	6,000
(St. John's Park)	N. Y. C.	6,000
(33rd St.)	N. Y. C.	6,000
(60th St.)	N. Y. C.	6,000
(Westchester Ave.)	N. Y. C.	4,000
(Desb. St.-Piers 27-8-9 North River)	P. R. R.	6,000
(37th St.)	P. R. R.	6,000
(Piers 49-50 N. R.)	P. R. R.	6,000
(Fulton Fish Market)	R. E. A.	4,000
(West Side Term.)	R. E. A.	4,000
Niagara Falls	Erie	6,000
	N. Y. C.	4,000
N. Tonawanda	N. Y. C.	4,000
Olean	P. R. R. (p)	3,000
Oswego	N. Y. C. (p)	4,000
Peekskill	N. Y. C. (p)	4,000
Plattsburg	D. & H.	6,000
Poughkeepsie	N. Y. C. (p)	4,000
Rochester	B. & O.	4,000
	Erie	6,000
	N. Y. C.	4,000
	P. R. R. (p)	4,000
Rome	N. Y. C.	6,000
Rouses Point	D. & H.	6,000
St. George Tfr.	B. & O.	6,000
Schenectady	N. Y. C.	4,000
Syracuse	D. L. & W.	4,000
	N. Y. C.	4,000
Troy	D. & H.	6,000
	N. Y. C.	4,000
Utica	N. Y. C.	3,500
	R. E. A.	6,000
Watertown	N. Y. C.	4,000
Whitehall	D. & H.	6,000
Yonkers	N. Y. C.	4,000
NORTH CAROLINA		
Charlotte	S. A. L. (p)	2,000
	Sou. (p)	4,000
Durham	N. & W. (p)	2,000
Goldsboro	A. C. L. (p)	2,000
Greensboro	Sou. (p)	4,000
Hamlet	S. A. L.	2,000
Henderson	S. A. L. (p)	2,000
Lumberton	S. A. L. (p)	4,000
Raleigh	S. A. L. (p)	4,000
Roanoke Rapids	S. A. L. (p)	4,000
Rocky Mount Tfr.	A. C. L. (p)	2,000
Spencer Tfr.	Sou.	2,000
Wilmington	A. C. L. (p)	2,000
Winston-Salem	N. & W. (p)	2,000
NORTH DAKOTA		
Fargo	G. N. (p)	4,000
	N. P.	4,000
Grand Forks	G. N. (p)	4,000
Minot	G. N.	2,000

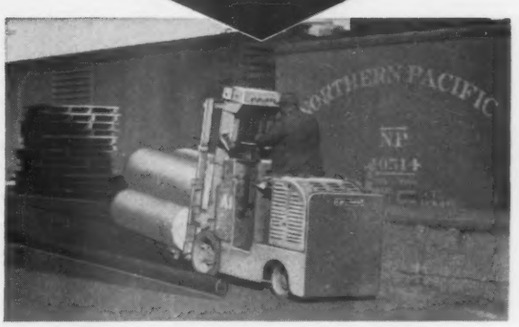
with ELWELL-PARKERS saves costly labor

As the first industrial truck manufacturer, Elwell-Parker was the pioneer in development of the Master Unit Load Principle. Elwell-Parker called it "Industrial Logistics"—showed shippers and railways how master unit loads, handled and *kept* on pallets or skids, moved goods faster, more cheaply, with less breakage, safely.

Your near-by E-P man, backed by Elwell-Parker's 44 years' leadership in this field, can help you profit to the utmost by unit load handling. From Elwell-Parker's 87 quality-built models, your E-P man can select exactly the right trucks for your needs. *Let us send him now!* The Elwell-Parker Electric Co., 4240 St. Clair Avenue, Cleveland 3, Ohio.

NEW GENERAL CATALOG
describes the complete E-P line in detail. Send for your copy *now.*

ELWELL-PARKER
POWER INDUSTRIAL TRUCKS
Established 1893



ONLY 5% OF PREVIOUS MAN-HOURS

A textile plant formerly loaded their 800 lb. rolls into a boxcar manually. It took 8 men with hand trucks 3½ hours to do the job. Now an E-P truck operator with one helper loads the car in 40 minutes.

60% SAVING IN MAN-HOURS

This firm has a job of unloading 2000 cases of food from a boxcar and moving them to storage in a warehouse. Previously it took 8 men with hand trucks 20 man-hours. Now an E-P truck and 2 men do the job in 8 man-hours. *Saving is 12 man-hours or 60%.*

Baled goods, stacked two pallet-loads high at the Little Rock, Ark., freight station of the Missouri Pacific. Many M.P. stations are provided with lift trucks and other types of mechanical handling equipment

At Chalmette Slip in New Orleans, La., a Southern fork lift machine, equipped with push-off device, picks a load of sugar from a take-it-or-leave-it pallet. This method has "caught on" widely where railroads handle export freight

Station	Railroad	Max. Capy. Lb.
OHIO		
Akron	B. & O.	6,000
	Erie	6,000
	P. R. R.	6,000
Alliance	P. R. R. (p)*	5,000
	N. Y. C.	4,000
Ashland	Erie	6,000
Ashtabula	N. Y. C.	4,000
Barberton	P. R. R.	4,000
Bellefontaine	N. Y. C.	4,000
Brighton	B. & O. (p)	5,000
Bryan	N. Y. C.	4,000
Bucyrus	P. R. R.	6,000
Canton	N. Y. C. & St. L.	5,000
	P. R. R.	5,000
	R. E. A.	5,000
Chillicothe	B. & O.	3,500
	N. & W. (p)	2,000
Cincinnati	B. & O.	4,000
	C. & O.	4,000
(West End)	L. & N.	4,000
(East End)	L. & N.	4,000
	N. Y. C.	4,000
	P. R. R.	6,000
	R. E. A.	4,000
	Sou.	2,000
Cleveland	B. & O.	4,000
	Erie	6,000
	N. Y. C.	6,000
(E. 9th St.)	N. Y. C. & St. L.	6,000
(E. 75th St.)	N. Y. C. & St. L.	
(Davenport)	P. R. R.	6,000
	R. E. A.	2,000
Columbus	B. & O.	4,000
	N. Y. C.	4,000
	N. & W. (p)	2,000
	P. R. R.	6,000
Coshocton	P. R. R.	6,000
Dayton	B. & O. (p)	5,000
	N. Y. C.	4,000
	P. R. R.	6,000
Delaware	N. Y. C.	4,000
Elyria	N. Y. C.	4,000
Fremont	N. Y. C. (p)	4,000
Galion	N. Y. C.	4,000
Hamilton	P. R. R.	6,000
Ironton	N. & W. (p)	2,000
Kenton	N. Y. C.	4,000
Lima	B. & O.	6,000
	Erie	6,000
	P. R. R.	6,000
Lorain	N. Y. C. & St. L.	
Mansfield	P. R. R. (p)	6,000
Marion	N. Y. C.	4,000
Massillon	P. R. R. (p)	6,000
Middletown	N. Y. C.	4,000
	P. R. R.	6,000
Newark	B. & O.	2,000
New London	N. Y. C.	4,000
Painesville	N. Y. C.	4,000
Portsmouth	N. & W.	2,000
Sandusky	N. Y. C.	4,000
Sharon	N. Y. C.	4,000
Shelby	N. Y. C.	4,000
Springfield	N. Y. C.	4,000
	P. R. R.	6,000
Steubenville	P. R. R. (p)	5,000
Tiffin	N. Y. C.	4,000
Toledo	B. & O.	6,000
	N. Y. C.	6,000
	N. Y. C. & St. L.	3,500
	P. R. R. (p)	6,000
	R. E. A.	4,000
	Wab. (p)	6,000
Troy	N. Y. C. (p)	4,000
Urbana	N. Y. C.	4,000
Warren	Erie	6,000
	P. R. R.	6,000
Willoughby	N. Y. C.	4,000
Youngstown	B. & O.	4,000
	Erie	6,000
	N. Y. C.	4,000
	P. R. R.	6,000
Zanesville	P. R. R.	6,000
OKLAHOMA		
Oklahoma City	A. T. & S. F.	4,000
	C. R. I. & P. (p)	4,000
	St. L.-S. F.	
Tulsa	St. L.-S. F.	
	A. T. & S. F.	4,000
Waynoka	A. T. & S. F.	4,000
OREGON		
Albany	S. P. (p)	4,000
Coos Bay	S. P. (p)	4,000
Eugene	S. P. (p)	4,000
Grants Pass	S. P. (p)	4,000
Medford	S. P. (p)	4,000
Portland	R. E. A.	4,000
	S. P. & S.	4,000
	S. P.	6,000
	U. P.	
Roseburg	S. P. (p)	4,000
Salem	S. P. (p)	4,000
PENNSYLVANIA		
Aliquippa	N. Y. C. (P. & L. E.)	4,000
Altoona	P. R. R.	2,000
Beaver Falls	P. R. R. (p)	5,000
Bellefonte	P. R. R.	5,000
Braddock	P. R. R. (p)	4,000
Butler	P. R. R.	6,000
Canonsburg	P. R. R.	6,000
Carlisle	P. R. R.	6,000
Carnegie	P. R. R.	6,000
Chambersburg	P. R. R.	6,000
Coatesville	P. R. R.	6,000
Connellsville	B. & O.	6,000
Erie	B. & L. E. (p)	20,000
	N. Y. C.	4,000
	N. Y. C. & St. L.	
	P. R. R. (p)	5,000
Greensburg	P. R. R.	6,000
Grove City	B. & L. E. (p)	20,000
Harrisburg	P. R. R.	6,000
	Rdg. (p)	4,000
Homestead	P. R. R.	6,000
Johnstown	B. & O.	6,000
	P. R. R.	6,000
Lancaster	P. R. R.	6,000
Latrobe	P. R. R.	6,000
Lebanon	P. R. R.	6,000
	Rdg.	4,000
Lock Haven	P. R. R. (p)	5,000
McKeesport	N. Y. C.	
	(P. & L. E.) (p)	4,000
	P. R. R.	6,000
Meadville	Erie	6,000
Monessen	N. Y. C.	
	(P. & L. E.) (p)	4,000
Newberry Jct. Tfr.	N. Y. C.	4,000
	Rdg.	4,000
New Castle	B. & O.	4,000
	N. Y. C.	
	(P. & L. E.) (p)	4,000
	P. R. R.	6,000
New Kensington	P. R. R.	6,000
Oil City	P. R. R. (p)	5,000
Philadelphia		
(Pier 24)	B. & O.	4,000
(Produce Term.)	B. & O. (p)	5,000
(Race St.)	B. & O. (p)	5,000
(Philadelphia Tfr.)	P. R. R.	6,000
(S. Philadelphia Sta.)	P. R. R.	3,000
(Federal St. Sta.)	P. R. R.	6,000
(Broad & Wash. Ave.)	P. R. R.	4,000
(31st & Ches't St.)	P. R. R. (p)	3,000
(Walnut S. Sta.)	P. R. R.	2,000
(Dock St. Sta.)	P. R. R.	5,000
(Shackamaxon Sta.)	P. R. R.	6,000
(Kensington Sta.)	P. R. R. (p)	3,000
(Fairhill Sta.)	P. R. R. (p)	5,000
	R. E. A.	2,000
(2nd St. & Lehigh Ave.)	Rdg.	6,000
(Willow & Noble St.)	Rdg.	6,000
(Wayne Jct. Tfr.)	Rdg.	4,000
Pittsburgh		
	B. & O.	6,000
	N. Y. C. (P. & L. E.)	6,000
(Federal St.)	P. R. R.	4,000
(11th St.)	P. R. R.	4,000
Reading	P. R. R.	2,000
	Rdg.	6,000
Scranton	Erie	6,000
Scranton Tfr.	D. L. & W.	4,000
Sharon	Erie	6,000
	P. R. R.	6,000
Shippensburg	P. R. R.	6,000
Steelton	P. R. R.	6,000
Stroudsburg	D. L. & W.	
Titusville	P. R. R. (p)	5,000
Turtle Creek—East Pittsburgh	P. R. R. (p)	6,000
Uniontown	P. R. R.	6,000
Warren	N. Y. C.	4,000
	P. R. R. (p)	5,000
Washington	B. & O.	6,000
	P. R. R.	6,000
Waynesboro	P. R. R.	6,000
Wilkes-Barre	P. R. R. (p)	8,000
Williamsport	P. R. R.	2,000
York	P. R. R.	4,000
RHODE ISLAND		
Providence	N. Y. N. H. & H.	4,000

*(p) denotes platform lift trucks

BAKER TRUCKS require LESS MAINTENANCE

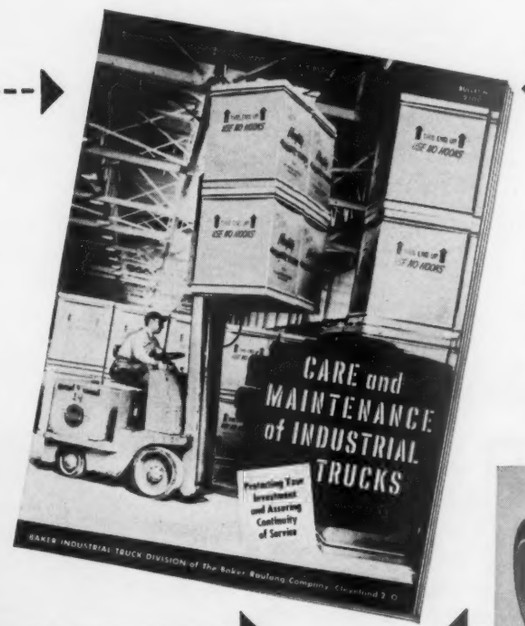
to you this means

- LESS TIME OUT OF SERVICE
- TOP OPERATING EFFICIENCY
- LOWER OVERALL COST

Baker Trucks are engineered and constructed to give maximum trouble-free service, and designed with many features for easier preventive maintenance and quicker, less costly repairs, when necessary. For example:

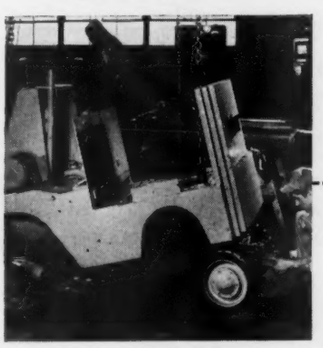
Electric dynamic braking saves wear on brake linings and protects drive axle and other moving truck parts by smoother, safer deceleration. Service brakes can be adjusted in 5 minutes, and relined in 30 minutes.

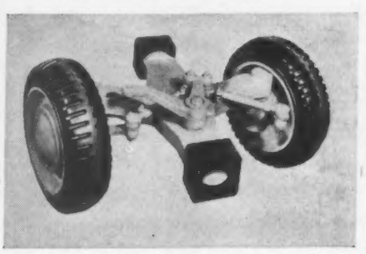
Baker exclusive Worm Drive Power Axle has fewer moving parts, is less subject to wear and does not lose efficiency with heavy loads or after long use. Mast assembly can be removed in 20 minutes and power axle pulled in 40 minutes.


CARE and MAINTENANCE of INDUSTRIAL TRUCKS
Protecting Your Investment and Assuring Continuity of Service
BAKER INDUSTRIAL TRUCK DIVISION of The Baker Raulang Company Cleveland 2 O

Baker Rubber-mounted Trailing Axle is the simplest in use on industrial trucks. Can be removed from truck in less than 20 minutes by disconnecting steering tie rod and removing 8 bolts. Proper steering geometry prevents "scrubbing" of tires and means longer tire life.

Use of jumbo rubber blocks to absorb twisting axle action and road shocks eliminates need for spring connections. Blocks require no attention. Steering connections are above axle where they are protected from damage. Wheel bearings easily examined.





The above are 4 of the 60 illustrations from the new 16-page picture-story manual "Care and Maintenance of Industrial Trucks." *Write for your copy today.*

BAKER INDUSTRIAL TRUCK DIVISION
of The Baker-Raulang Company
1255 WEST 80th STREET, CLEVELAND 2, OHIO • *In Canada: Railway and Power Engineering Corp., Ltd.*

Baker® INDUSTRIAL TRUCKS

One of a number of new stations built by the Northern Pacific in recent years is its freighthouse at Tacoma, Wash. Fork lift trucks and burden carriers have been used to equip these stations to handle l.c.l. economically

A fork truck eases up to a carton-loaded pallet at the Santa Fe's freighthouse in Los Angeles. Chain visible alongside the operator sometimes comes in handy when the truck must handle bulky pieces of freight

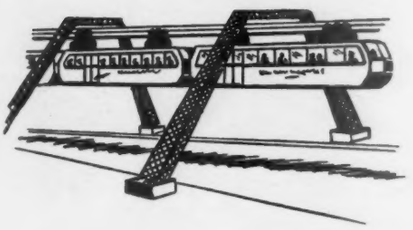
Station	Railroad	Max. Capy. Lb.
SOUTH CAROLINA		
Charleston	S. A. L. (p)*	2,000
Columbia	A. C. L. (p)	2,000
	S. A. L. (p)	2,000
Darlington	A. C. L. (p)	2,000
Florence Tfr.	A. C. L. (p)	2,000
Georgetown	S. A. L. (p)	4,000
Sumter	A. C. L. (p)	2,000
SOUTH DAKOTA		
Aberdeen	C. M. St. P. & P.	4,000
Sioux Falls	G. N. (p)	4,000
Watertown	G. N. (p)	4,000
TENNESSEE		
Chattanooga	N. C. & St. L.	3,000
	Sou. (p)	6,000
Johnson City	Clinchfield	2,000
Knoxville	L. & N. (p)	6,000
	R. E. A.	4,000
	Sou.	2,000
Memphis	I. C.	4,000
	M. P.	6,000
	N. C. & St. L. (p)	3,000
	St. L.-S. F.	
	Sou.	2,000
Nashville	L. & N. (p)	6,000
	N. C. & St. L. (p)	3,000
TEXAS		
Amarillo	A. T. & S. F.	4,000
Beaumont	M. P.	2,000
Corpus Christi	M. P.	2,000
Dallas	A. T. & S. F.	4,000
	M-K-T	2,000
	R. E. A.	2,000
	St. L. S. W.	5,000
	T. & N. O.	4,000
	T. & P.	4,000
El Paso	A. T. & S. F.	4,000
	T. & N. O.	4,000
Fort Worth	A. T. & S. F.	4,000
	M-K-T	2,000
	T. & P.	2,000
Galveston	A. T. & S. F.	4,000
Harlingen	M. P.	2,000
Houston	C. R. I. & P.	4,000
	M-K-T	5,000
	M. P.	4,000
	R. E. A.	4,000
	T. & N. O.	6,000
Laredo	M. P.	2,000
Lubbock	A. T. & S. F.	4,000
San Angelo	A. T. & S. F.	4,000
San Antonio	M-K-T	2,000
	M. P.	2,000
	T. & N. O.	4,000
Temple	A. T. & S. F.	4,000
Tyler	St. L. S. W. (p)	4,000
Waco	St. L. S. W. (p)	4,000
Wichita Falls	M-K-T	2,000
UTAH		
Ogden	R. E. A.	4,000
	U. P.	
Salt Lake City	D. & R. G. W.-W. P.	5,000
	U. P.	

*(p) denotes platform lift trucks

Station	Railroad	Max. Capy. Lb.
VERMONT		
Newport Storage Shed	C. P. R.	3,000
White River Junction	B. & M.	2,000
VIRGINIA		
Bedford	N. & W. (p)	2,000
Bristol	N. & W. (p)	2,000
Danville	A. & D.	2,500
	Sou.	2,000
Lynchburg	N. & W.	2,000
Martinsville	N. & W. (p)	2,000
Norfolk (Pier "S")	N. & W.	4,000
(City Sta.)	N. & W.	4,000
	P. R. R.	6,000
	Vgn.	4,000
Norton	N. & W. (p)	2,000
Petersburg	N. & W. (p)	2,000
Pinner's Point	A. C. L.	2,000
	Sou.	2,000
Portsmouth	S. A. L.	4,000
Pulaski	N. & W. (p)	2,000
Radford	N. & W. (p)	2,000
Richmond	A. C. L. (p)	2,000
	C. & O.	4,000
	S. A. L. (p)	2,000
Roanoke	N. & W.	4,000
	Vgn. (p)	5,000
Winchester	P. R. R.	6,000
WASHINGTON		
Pasco	S. P. & S.	4,000
Seattle	C. M. St. P. & P.	4,000
	G. N.	2,000
	N. P.	4,000
	R. E. A.	4,000
	U. P.	
Spokane	G. N.	3,000
	N. P.	4,000
	S. P. & S.	4,000
Tacoma	G. N.	4,000
	N. P.	4,000
WEST VIRGINIA		
Bluefield	N. & W. (p)	2,000
Charleston	N. Y. C.	4,000
Clarksburg	B. & O.	6,000
Huntington	C. & O. (p)	4,000
Mullens	Vgn. (p)	5,000
Parkersburg	B. & O. (p)	5,000
Weirton	P. R. R.	6,000
Wheeling	B. & O. (p)	5,000
	P. R. R.	6,000
Williamson	N. & W. (p)	2,000
WISCONSIN		
Milwaukee	C. M. St. P. & P.	4,000
	G. T. W.	4,000
	R. E. A.	4,000
Superior	G. N.	4,000
WYOMING		
Cheyenne	U. P.	
Rock Springs	U. P.	

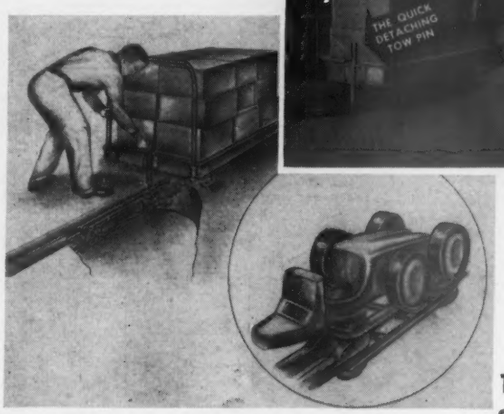
Station	Railroad	Max. Capy. Lb.
ALBERTA (Canada)		
Edmonton	C. N. R.	4,000
	C. P. R. (p)	2,500
Lethbridge	C. P. R. (p)	2,500
BRITISH COLUMBIA (Canada)		
Vancouver Piers		
(Frt. Sta. & Tfr.)	C. N. R.	4,000
	C. P. R.	10,000
	G. N.	4,000
MANITOBA (Canada)		
Winnipeg	C. N. R.	4,000
	C. P. R.	2,500
NEW BRUNSWICK (Canada)		
St. John Piers	C. N. R.	4,000
St. John Reed's Point	C. P. R.	4,000
West St. John (winter)	C. P. R.	4,500
NEWFOUNDLAND (Canada)		
Port Aux Basques	C. N. R.	4,000
St. John's	C. N. R.	3,000
NOVA SCOTIA (Canada)		
Digby	C. P. R.	4,000
Halifax	C. P. R.	4,000
(Piers)	C. N. R.	6,000
ONTARIO (Canada)		
Belleville	C. N. R. (p)	5,000
Brantford	C. N. R. (p)	5,000
Cornwall	C. N. R. (p)	4,000
Fort William	C. P. R.	2,500
Galt	C. P. R. (p)	2,000
Guelph	C. N. R. (p)	5,000
Hamilton	C. N. R.	3,000
Kingston	C. N. R. (p)	5,000
Kitchener	C. N. R. (p)	5,000
London	C. N. R.	4,000
	C. P. R. (p)	2,500
Merritton	C. N. R.(p)	4,000
North Bay	C. P. R. (p)	2,500
Ottawa	C. N. R. (p)	5,000
Owen Sound	C. N. R. (p)	5,000
Peterboro	C. N. R. (p)	5,000
Point Edward Piers	C. N. R.	6,000
Port Arthur Piers	C. N. R.	6,000
St. Catharines	C. N. R.	2,500
Sarnia	C. N. R. (p)	3,500
Stratford	C. N. R. (p)	5,000
Sudbury	C. P. R.	4,000
Toronto	C. N. R.	4,000
	C. P. R.	2,000
West Toronto	C. P. R. (p)	2,500
Windsor	C. N. R. (p)	5,000
QUEBEC (Canada)		
Montreal Piers		
(summer)	C. P. R.	4,500
(summer)	C. N. R.	6,000
(Frt. Sta. & Tfr.)	C. N. R.	5,000
(Place Viger Sta.)	C. P. R.	4,000
Quebec	C. N. R. (p)	5,000
Sherbrooke	C. P. R.	2,500
Sorel	C. N. R. (p)	10,000
SASKATCHEWAN (Canada)		
Saskatoon	C. N. R.	4,000

The FIRST monorail



Development of the unique single track railroad car, balanced by gyroscopes, was started by the Englishman Louis Brennan in 1896. Never in wide use, it nonetheless led to many further applications based upon the principles thus developed.

JERVIS B. WEBB COMPANY was the FIRST to develop TOWVEYOR SYSTEMS



under-floor type towing conveyors

This continuous chain conveyor runs in a steel slot *below* the floor. There is nothing to obstruct. A simple towing pin device is attached to any standard 4-wheel truck or trailer, 2-wheel truck with dolly, and operator either engages or disengages by lowering or raising the pin. When the pin is dropped into the slot, the trolley attached to the Webb Drop Forged Rivetless Chain picks up the load automatically. This original Webb development — The Towveyor — offers great speed and efficiency for handling boxes, packages, barrels, tote boxes, parts, etc. Loading and unloading can be done at any point. The Towveyor System is flexible — trucks may be added, disengaged or side tracked, as desired.

Jervis B. Webb Company

CONVEYOR SYSTEMS Reduce Handling Costs

Jervis B. Webb systems can be especially designed for freight depots where they can greatly expedite the handling of incoming and outgoing unit loads.

Railway executives are invited to ask Jervis B. Webb Company Engineers for their recommendations as to the proper layout to give them greater handling efficiency, better working conditions and lower labor costs.

CONVEYOR ENGINEERS AND MANUFACTURERS

JERVIS B. WEBB COMPANY

8945 ALPINE AVE
DETROIT 4 MICH

OFFICES IN PRINCIPAL CITIES

GENERAL NEWS

Osmond Becomes Assistant General Counsel of D.T.A.

Harvard R. Osmond has been appointed assistant general cousel of the Defense Transport Administration. Mr. Osmond, who has been in government service since 1925, was assistant general counsel of the former Office of Defense Transportation from 1945 until 1949.

Gerald L. Phelps has resigned from D.T.A.'s legal staff to become general attorney for the Chicago & Eastern Illinois. At D.T.A., he was chief attorney—operations divisions.

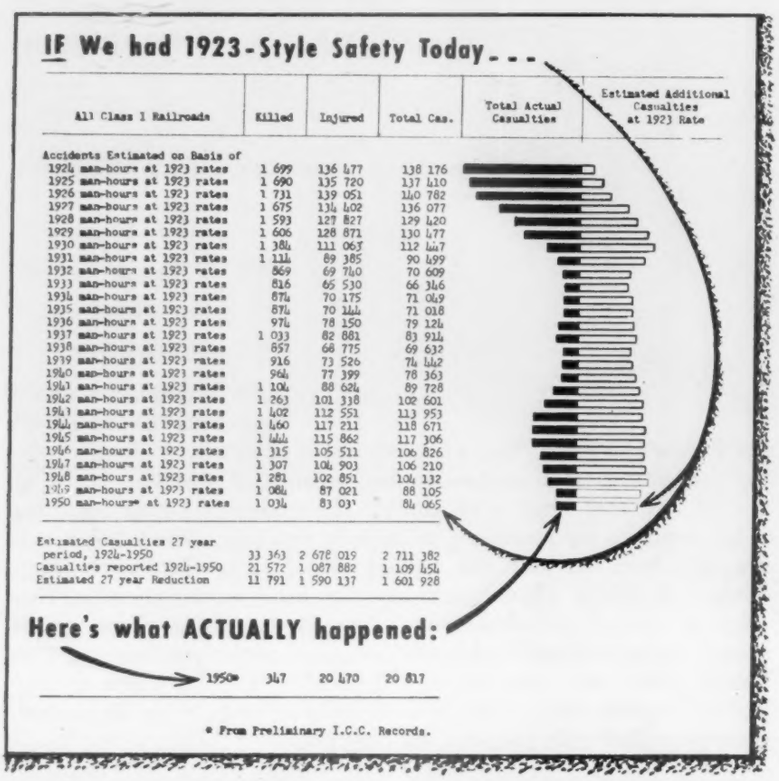
Atlantic Board Forecasts Loadings Increase

At its meeting in Newark, N. J., on September 20, the Atlantic States Shippers Advisory Board announced, through its president, W. W. Weller, eastern traffic manager of the Weyerhauser Sales Company, that car loading in the fourth quarter of 1951 would be 3.2 per cent greater than in the same period of 1950. Shippers in the board area estimate, said Mr. Weller, that fourth quarter loadings will run to 1,094,550 cars, which is 34,397 more than the 1,060,153 actually loaded during the same quarter last year.

In view of the increased loadings forecast by the board, C. R. Megee, vice-chairman of the Car Service Division of the Association of American railroads, and G. C. Randall, C.S.D. district manager at New York said car supply would be "tight" during the last three months of 1951. This would be particularly true of gondolas, hoppers and flat cars. Mr. Megee said that in the fourth quarter the nation's railroads' car ownership would gain by about 5,800 cars.

A. E. Kriesien, assistant vice-president and general manager of the Erie and vice-chairman of the board's Railroad Contact Committee, said that while railroads were having trouble getting enough steel to build all the new cars they want to build, there was enough steel on hand to enable them to continue their program of reducing the number of bad order cars.

In speaking on freight claims, P. M. Shoemaker, vice-president of the Delaware, Lackawanna & Western and chairman of the Railroad Contact Committee said there had been an increase, nationally, of 10 percent in number of claims filed against railroads during the first six months of this year, as compared with 1950. A great part of this increase, Mr. Shoemaker said, was due to an increase in rough handling of cars during switching. The contact committee chairman said that in January and February, 1952, the railroads would make a concerted drive to reduce rough handling.



NEARLY 700 LIVES WERE SAVED, and 62,561 employee injuries were prevented, in 1950, thanks to the continuous work of the National Safety Council's Railroad Section and the Safety Section of the Association of American Railroads. The above chart is adapted from the council's recently published "Green Book," a report on the 24th Railroad Employees' National Safety Award (1950) winners of which were announced in the May 28 *Railway Age*, page 61. The chart is based on a projection of Class I railroads' 1923 safety performance in terms of man-hours worked in subsequent years. The difference between what did happen and what might have happened is an eloquent tribute to the work of the two railroad safety organizations

Canadian Unions Suggest "Cost-of-Living" Pay Raise

Frank H. Hall, chairman of a general conference committee representing 18 international railway labor unions, has announced that the unions have approached Canadian railways for consideration of wage increases because of the increasing cost of living.

"In view of the fact that last year's arbitration settlement has another year to go," he said, "no formal request for a specific amount of increase has been represented. It was anticipated the railways would give sympathetic consideration to the matter as being a common problem, and that here would be discussions between them and the unions on the subject in the near future."

The last increase for the majority of Canadian railway workers was effective September 1, 1950. It amounted to seven cents an hour.

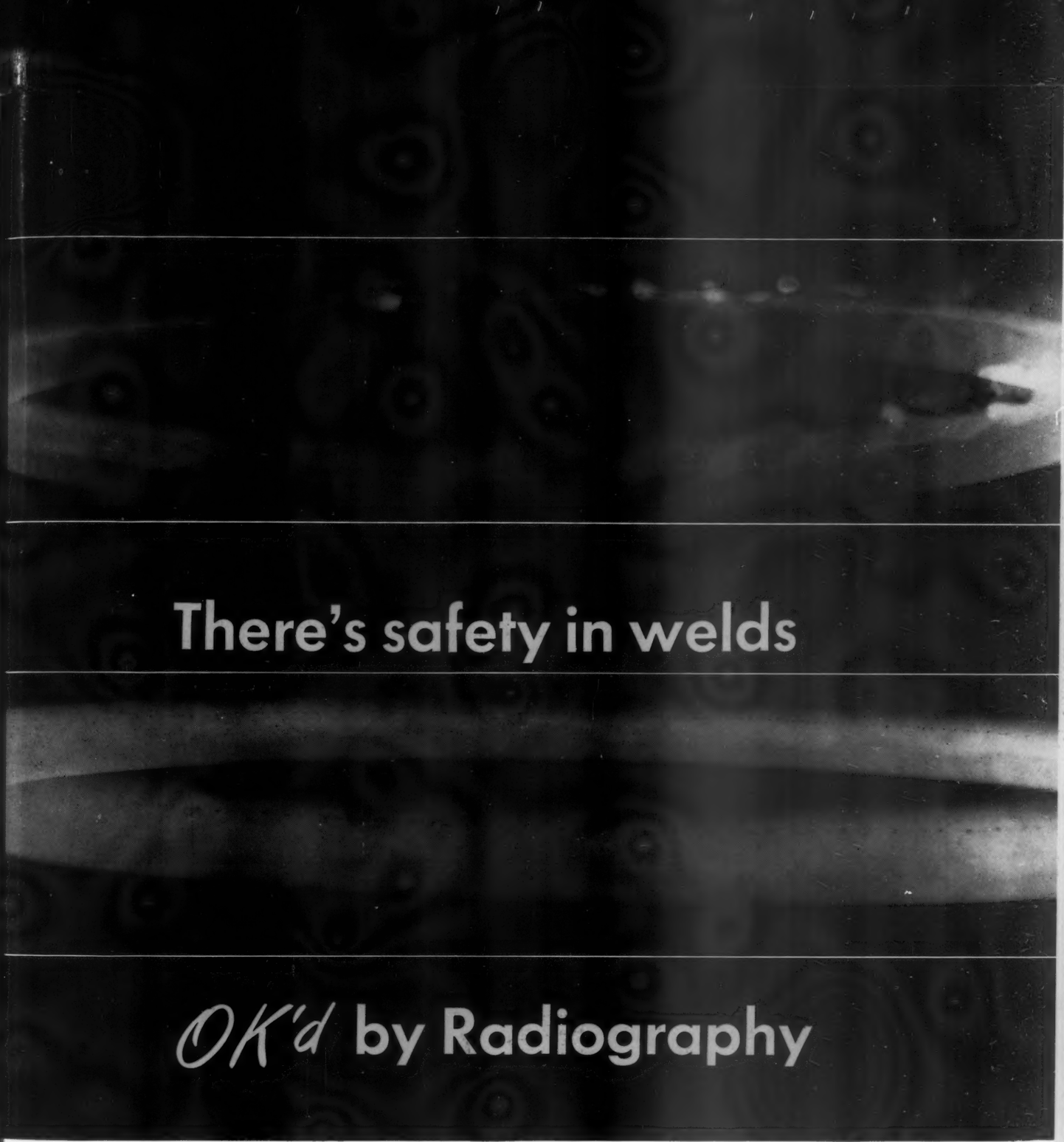
Mr. Hall added that "this was the actual amount requested by the unions on June 16, 1949, but during the interval and the prolonged negotiations the amount then fell short by 3.2 cents of maintaining the 1948 wage-cost-of living relationship. Since September 1950 the cost-of-living index has risen by more than 19 points."

Birmingham Southern General Offices Moved

The Birmingham Southern has moved its general offices from the Brown-Marx building in Birmingham, Ala., to new quarters in suburban Fairfield. All mail intended for the road's general offices should be addressed to Post Office Box 579, Fairfield, Ala.

Freight Car Loadings

Loadings of revenue freight in the week ended September 22 totaled 864,310 cars, the Association of American Railroads announced on September 27. This was an increase of 13,498 cars,
(Continued on page 135)



Radiographs showing welds in gas tanks. Lower radiograph shows acceptable tank weld.

These radiographs show the welds in propane gas tanks. The upper discloses a lack of fusion and heavy gas porosities. Out of a lot of several hundred tanks, Radiography showed a dozen to be hazardous—twelve potential accidents that were prevented.

Because Radiography can prove the soundness of welds it is opening new fields to welders in manufacturing pressure vessels and in other applications where welding was once barred, it is now an accepted procedure.

This is why Radiography can help you build your business as well as earn a reputation for highly satisfactory work.

If you would like to know more about what it can do for you in your own work, discuss it fully with your x-ray dealer.

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Radiography...

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STANDS FOR
IN NEW
Chilled Car Wheels

service

NEW Chilled Car Wheels now deliver more ton-miles of service in freight use with more braking efficiency and less wheel and rail wear. (Proven by leading Railroad test)

safety

NEW Chilled Car Wheels are safest ever produced... greater rim and flange strength... reported wheel failures at all-time low.

superiority

NEW Chilled Car Wheel design (AAR X-1) gives you a freight wheel superior in every important requisite ...stronger... more economical... longer service life.

standard

NEW Chilled Car Wheels... now better than ever... have been adopted as a new standard by the AAR. Backed by chilled wheel reliability for over 100 years.

Discuss the advantages of *new* Chilled Car Wheels for freight service with an A.C.F. representative.
American Car and Foundry Company, New York
Chicago • St. Louis • Cleveland • Philadelphia
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by a.c.f.

AMCCW

"even a blind man can see it"

from Sept. 10 Railway Age

"One of the subjects planned for discussion at the Association of American Railroads Mechanical Division annual meeting in Chicago during the last week in June, but not included for lack of time, was the high cost of unrestrained impact to lading and equipment in railway freight service. The representative of the Freight Claim Division who was to lead in this discussion says that, *although the high cost of inefficient and inadequate damping of longitudinal, lateral and vertical impacts is more or less buried in the claim expense, "even a blind man can see it."*

The nature of commodities involved in these damage claims indicates that ineffective or inoperative draft gears and truck springs caused, or contributed to, a large part of the damage. The claim man says, "Proof of this is lacking, but the claim department by now has enough evidence of the importance of good shock insulation in damage-free transportation to clear its mind of any doubt that rough-riding cars *and lifeless draft gears are major factors in damage claims.*"

HIGH COST OF IMPACT

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In 1948, for example, the total claims paid for freight loss and damage by United States and Canadian railroads was approximately $89 million, of which $67 million was for damage of undetermined cause. The nature of commodities involved in these damage claims indicates that ineffective or inoperative draft gears and truck springs caused, or contributed to, a large part of the damage. The claim man says, "Proof of this is lacking, but the claim department by now has enough evidence of the importance of good shock insulation in damage-free transportation to clear its mind of any doubt that rough-riding cars and lifeless draft gears are major factors in damage claims."

By way of example, the rail movement of one fragile commodity is mentioned. The breakage in a test run of 140 cars was 50 per cent less in ordinary cars equipped with various [illegible] of snubbers and long-travel springs [illegible] not so equipped. Similar improvement [illegible] the transportation of household appliances, glassware, bakery goods, livestock [illegible] of the damage from rough-riding [illegible] experience with dressed beef. The [illegible] or so of beef off hooks or torn by hooks pulling through flesh and bone. Showing what can be done to reduce damage claims for this commodity, records indicate that one packer with 3,700 beef cars in service had only one claim amounting to $23 out of a total of $90,000 claims in a certain study. Another packer had greater damage than that in a single shipment. A third large packer, with claims formerly greatly exceeding the other two combined, is reported to have improved truck-spring conditions to such an extent that damage in its cars is no longer a problem.

Largely as a result of freight-truck spring and snubber research conducted by the A.A.R., in conjunction with railway supply companies, interest in this subject has been greatly augmented. It is expected that roughly, 95 per cent of the freight cars ordered this year will have long-travel friction-snubbed springs. The problem which confronts railroads is to equip the present inventory of older cars still used in high-speed service with modern trucks as rapidly as practicable, not forgetting that many of these cars, up to perhaps 25 per cent, have draft gears which are obsolete or suffer from lack of maintenance, and that snubbers, worn out or broken, are no protection against damaging vertical shocks.

RAILWAY AGE
EDITORIAL COMMENT

The Answer?

The answer is better cushioning . . . equipment of all cars with WAUGHMAT TWIN CUSHIONS. TWIN CUSHIONS, comprised of a series of rubber pads bonded thru steel plates, have no solid point. Double acting, they cushion in pull and in buff. Reducing the force and frequency of impacts, they halve those component vertical shocks so destructive of lading.

WAUGHMAT TWIN CUSHIONS are the lowest cost *big* improvement on any railroad car.

Specify on new cars or for draft gear replacement on existing cars.

WAUGHMAT *Twin Cushions*

TRADE MARK REGISTERED

WAUGH EQUIPMENT COMPANY - 420 LEXINGTON AVE, NEW YORK 17, N.Y.

Chicago · St. Louis · Canadian Waugh Equipment Company: Montreal

(Continued from page 130)

or 1.6 per cent, compared with the previous week; a decrease of 6,219 cars, or 0.7 per cent, compared with the corresponding week last year; and an increase of 202,842 cars, or 30.7 per cent, compared with the equivalent 1949 week, when there was a coal miners' strike.

Loadings of revenue freight for the week ended September 15 totaled 850,812 cars; the summary for that week, as compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, September 15

District	1951	1950	1949
Eastern	138,164	148,662	134,159
Allegheny	172,043	174,869	141,751
Pocahontas	67,674	66,190	49,156
Southern	129,798	133,335	115,953
Northwestern	148,807	143,527	131,157
Central Western	131,216	135,248	124,001
Southwestern	63,110	64,827	46,845
Total Western Districts	343,133	343,602	302,003
Total All Roads	850,812	866,658	743,022
Commodities:			
Grain and grain products	53,381	50,218	48,433
Livestock	14,090	12,857	15,458
Coal	154,437	159,812	129,250
Coke	15,760	15,319	10,082
Forest products	48,569	49,401	39,852
Ore	85,770	82,571	62,743
Merchandise l.c.l.	75,454	90,035	85,520
Miscellaneous	403,351	406,445	351,684
September 15	850,812	866,658	743,022
September 8	732,908	751,449	623,962
September 1	829,391	851,841	703,934
August 25	838,587	838,665	747,211
August 18	829,398	851,240	731,215
Cumulative total 37 weeks	28,613,365	26,748,144	26,493,382

In Canada.—Car loadings for the week ended September 15 totaled 86,822 cars, compared with 73,021 cars for the previous week and 88,029 cars for the corresponding week last year, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
September 15, 1951	86,822	37,729
September 16, 1950	88,029	34,840
Cumulative totals for Canada:		
September 15, 1951	2,936,344	1,279,623
September 16, 1950	2,655,223	1,129,983

RR Problems Feature A.T.C. Convention

Before more than a thousand registered delegates of member traffic clubs from all over the country and guests, attending the 28th annual meeting of the Associated Traffic Clubs of America in Seattle, Wash., September 24-26, the two main addresses concerned chiefly the problems of railroads and solutions suggested therefor.

Speaking on "Dilemma of the Rail," Col. Robert S. Macfarlane, president of the Northern Pacific, charged that "denial of the opportunity to earn a fair rate of return on private property devoted to public use is no less than plain, old-fashioned confiscation. He said the recent freight rate decision gave railroads "less than half" the relief they need as a result of higher costs incurred in 1951 alone. To illustrate "how material shortages slow up freight car production," he noted that, more than a year ago, his road set in motion a program to build 500 box cars in company shops—construction to start June 1, 1951, and to be completed by August 24, in time to help move this year's grain crop. "As of today, we haven't turned out one finished car in this program, simply because of our inability to obtain delivery on certain essential items of steel."

In his address on "Some Pressing Transportation Problems," Lowe P. Siddons, chairman of the executive committee of the National Industrial Traffic League and traffic manager of the Holly Sugar Corporation, devoted himself almost entirely to problems of railroads, except that he urged a less stingy budget for the Interstate Commerce Commission. He urged upon railroads and regulators the necessity of reducing the passenger service deficit, especially that incurred in movement of mail and express. The chief target of the speaker was the obsolete and unrealistic working rules still pertaining to operating employees of the railroads. He demonstrated that, in comparison with wages, hours and labor required of operating employees of competing forms of transport, the compensation of train service employees is too high.

"The railroads must compete with trucks, buses, water and air carriers. They are losing freight to these forms of transportation by leaps and bounds. It would seem to me that railroad labor . . . would take stock of their position and so modernize working rules that they will represent the times in which they work and the competition which exists."

Thompson Becomes Secretary of N.M.B.

Eugene C. Thompson has been appointed secretary of the National Mediation Board, succeeding the late Thomas E. Bickers. Mr. Thompson has been a member of the board's staff of mediators since 1936, and he served as acting secretary on several occasions in recent years.

Tennessee-Tombigbee Canal Is Unjustified

Sharp criticisms of survey methods and estimates employed by the Army's Corps of Engineers were included in a House subcommittee report which found that the proposed waterway to connect the Tennessee and Tombigbee rivers "cannot be justified . . . unless economic conditions in the area drastically change." Such a change "is not presently foreseeable," the report added.

The report was made by the House Appropriations Committee's subcommittee on deficiencies and Army civil functions. It called for rejection of findings made in the Army engineers' latest report on Tennessee-Tombigbee, which was favorable to the project.

"Additional planning funds," the House group said, "should not be appropriated for the proposed . . . waterway, and in no event should funds be appropriated for the initiation of construction. With respect to the unexpended planning funds heretofore appropriated, such funds should be withdrawn from this proposed project."

The engineers' latest report, made in 1947, gave the proposed project a favorable "benefit-cost" ratio of 1.13. This was an upward revision of the 1.05 ratio given in a 1945 report. The House group reported that its staff found that the ratio would be 0.27—"far below unity."

The subcommittee's report went on to outline the history of the project for which "planning funds" totaling $920,000 have been appropriated. It challenged the engineers' latest estimate that the project would cost $179.3 million, saying that its staff had put the cost at $205.5 million. Moreover, it added, these cost figures do not include expenditures which would be required to improve connecting waterways and thus round out the whole route involved.

In another part of the report, the subcommittee said that the chief of engineers had failed to inform Congress (when the favorable report of 1945 was submitted) of the "extreme doubt entertained by one member of the Board of Engineers". The subcommittee's appraisal of the engineers' estimates and survey methods was reflected in this comment:

"Just as the construction cost of the proposed project, as used by the Corps of Engineers in their computation of the benefit-cost ratio is unrealistic, the Corps' computation of benefits is out of touch with reality."

The Corps' estimates of prospective traffic on the proposed waterway were found to have included 800,000 tons of bauxite and 253,000 tons of alumina, despite the fact that "no barge has yet been designed or built which

Car Surpluses and Shortages

Average daily freight car surpluses and shortages for the week ended September 22 were announced by the Association of American Railroads on September 27 as follows:

	Surplus	Shortage
Plain Box	133	3,610
Auto Box	104	56
Total Box	237	3,666
Gondola	0	4,627
Hopper	0	4,727
Covered Hopper	0	88
Stock	172	843
Flat	58	553
Refrigerator	2,315	0
Other	416	0
Total	3,198	14,504

NATIONAL FIRE PREVENTION WEEK —October 7-13—is the occasion for distribution of this poster—13 inches by 10 inches, printed in red and black —by the Transportation Mutual Insurance Company of Philadelphia

is adaptable to the transportation of alumina." Prospective costs of operating barges on the proposed waterway would be higher than the Corps estimated, the subcommittee concluded on the basis of "evidence which the Corps had and has in its possession."

Disputes on Alaska Road Covered by New Procedure

Establishment of procedures for settling working-rules disputes on the Alaska railroad was announced last week by Secretary of Interior Oscar L. Chapman. An adjustment board, patterned in part after the National Railroad Adjustment Board, will be set up to handle disputes arising out of interpretation of agreements.

The adjustment board shall consist of three members, one appointed by the railroad, one by the union affected, and one by agreement between the two parties. Awards by the board will be final and binding unless disapproved by the Secretary of Interior within 30 days.

Because disputes on the Alaska road are few, a permanent board is not contemplated but a new board will be created whenever disputes exist which should be referred to it, the announcement said.

M-K-T and I.C. Plan Motor Competitive Rates on L.C.L.

Fourth-section relief to permit motor competitive rates on l.c.l. and any-quantity traffic between Oklahoma and Texas points on the Missouri-Kansas-Texas has been granted by the Interstate Commerce Commission. The relief exempts the carrier from compliance with the long-and-short-haul and aggregate-of-intermediate provisions of the Interstate Commerce Act.

The commission's order provides that such relief shall remain in effect until September 16, 1952. During this period the road can establish the competitive rates while maintaining higher rates from and to intermediate points.

Similar relief was granted the Illinois Central for application between some of its stations in the South. However, no joint rates between the "Katy" and I.C. may be established.

In seeking authority to establish motor competitive rates, the M-K-T and I.C. indicated the move was designed to recover l.c.l. traffic lost to motor carriers, including motor subsidiaries of other railroads. The roads said the motor carriers have maintained rates on this traffic that are below the rail level.

Knudson Still Aiming At 10,000-Car Target

Freight-car shortages will continue until the serviceable fleet has been increased by 300,000 cars, James K. Knudson, administrator of the Defense Transport Administration, said in Washington, D. C., last week. He made the statement at a September 25 meeting where defense-agency officials gave a group of editors and correspondents what Defense Mobilizer Charles E. Wilson called a "comprehensive briefing on the general mobilization situation."

Mr. Knudson appraised the freight-car situation as one wherein the prospects were "not bright" for early achievement of the desired output of 10,000 new cars per month. He asserted that D.T.A. will persist in its efforts to reach that goal, but that, meanwhile, it will have to continue calling upon railroads and shippers for more and more efficiency in use of the present fleet.

D.T.A. is proceeding on the basis of an assumption that the country will not become involved in an "all-out" war during the current fiscal year, Mr. Knudson also said. He added, however, that his agency has "in our locked drawers plans to put immediately into effect measures to meet any emergency."

Transport and Storage 2nd In Amortization Line-Up

Transportation and storage facilities comprise the second largest group to receive certificates of necessity in the accelerated amortization program, according to the Defense Production Administration.

Facilities costing an estimated $1,393,772,000 have received D.P.A. approval, of which approximately $1,006,139,000 was allowed for rapid amortization. This amounts to approval of 72.2 per cent of the cost of these facilities for fast tax write-off. A total of 486 certificates of necessity have been approved in the transportation and storage group.

The so-called "basic materials" group is the largest group in the certified expansion program, D.P.A. said.

Alaska Rail Rates

A temporary 10 per cent increase in railroad freight rates in Alaska, to be applied as a surcharge, has been authorized by Secretary of Interior Oscar L. Chapman. The increase was necessitated by increased operating costs, particularly a recent $1,300,000 wage increase granted in accordance with increases on stateside railroads.

An announcement by Interior said this was the first increase in Alaska freight rates in 14 years. Yet for the year ending June 30, 1950, the "revenue per ton-mile of revenue freight" was 6.6 cents. By comparison, Class I roads in the United States had an average ton-mile revenue of 1.3 cents in 1950.

The announcement said substantial increases in tonnage since 1938 had more than offset previous increases in costs. However, the recent wage increases would cause the line to suffer a deficit of more than $1 million in 1951 unless rates go up.

While the present 10 per cent was authorized on a "temporary" basis, the department is continuing to study the problem and will "probably" authorize permanent increases later this year.

CAR SERVICE

I.C.C. Service Order No. 858, which places restrictions on the reconsigning of lumber, has been modified by Amendment No. 6, which set back the expiration date from September 30 until December 31.

I.C.C. Service Order No. 865, which imposes super-demurrage charges running up to $20 per day, has been modified by Amendment No. 14, which extended for another month (until November 1) the exemption provision applicable to refrigerator cars.

I.C.C. Service Order No. 875, which maintains a permit system governing the movement of lake-cargo coal, has been modified by Amendment No. 1, which set back the expiration date from October 9 until April 9, 1952.

I.C.C. Service Order No. 876, which requires "heavy" loading of lumber and lumber products, has been modified by Amendment No. 1, which set back the expiration date from September 30 until March 31, 1952. Also set back to the same date were the expiration dates of general permits that have been issued under the order.

N. Y. CENTRAL TAKES BIGGEST GIRDER FOR A RIDE *Five flatcars carry 107-ton beam for Bronx Parkway Viaduct*

BIGGEST BEAM PUT OVER CENTRAL TRACKS
107-Ton Girder for Bronx Viaduct takes a lot of moving.

NIGHT CROWD SEES A DRAMA IN STEEL
Dodging Trains, Crew Swings 107-Ton Bridge Girder Over Tracks in Upper Bronx.

"BIG STEEL" steals the headlines!

But there's a still bigger story behind New York Central Freight

Crowds stared and newspapers broke out their headline type as New York Central successfully moved this record, 107-ton steel girder.

Yet there's bigger news behind the half-million tons that start moving on the average *every* day in *any* weather along New York Central tracks.

It's the story of 59,000 new freight cars . . . more than a million new diesel horsepower . . . new yard and right of way improvements.

A multi-million dollar investment in efficiency that pays off every day for every shipper along New York Central's 11,000 miles.

NEW YORK CENTRAL SYSTEM

New York Central

The Smooth Water Level Route

EQUIPMENT AND SUPPLIES

C. P. Orders Equipment Costing Over $50,000,000

The Canadian Pacific has ordered 50 diesel-electric locomotive units, 4,250 freight cars and 50 head-end passenger-train cars, at a total cost of more than $50,000,000. Six 1,600-hp. "A" and six 1,600-hp. "B" units will be built at the recently established Kingston, Ont., plant of the Canadian Locomotive Company. Twenty 1,500-hp. units—6 "A," 11 "B" and 3 road-switching—will be constructed by General Motors Diesel, Ltd. Montreal Locomotive Works will supply six 1,000-hp. and 12 660-hp. switching units.

Orders for the cars were placed as follows: Canadian Car & Foundry Co. —1,000 50-ton box, 300 50-ton automobile, 100 70-ton flat and 25 70-ton baggage-express cars; C. P. Angus shops—1,200 50-ton box cars; National Steel Car Corporation—400 50-ton freight refrigerator, 350 50-ton box, 300 70-ton covered hopper and 25 50-ton express refrigerator cars; Eastern Car Company—300 70-ton longitudinal hopper and 300 70-ton drop-end gondola cars.

Domestic Equipment Orders Reported in September

Domestic orders for 107 diesel-electric locomotive units and 2,425 freight-train cars were reported in *Railway Age* in September. Estimated cost of the locomotives is $14,313,000, and of the freight-train cars, $14,550,000. An accompanying table lists the orders in detail.

During the first nine months of 1951 *Railway Age* has reported domestic orders for 1,803 diesel-electric locomotive units and six steam locomotives costing an estimated $287,527,777; 65,950 freight-train cars costing an estimated $380,463,000; and 122 passenger-train cars costing an estimated $17,485,000.

WORLD'S LONGEST RAILS?—The rails on which this train is running are each 19,812 ft. long, probably the longest in the world. Located on the Elgin, Joliet & Eastern, a few miles east of Joliet, Ill., these rails were made by joining together standard 39-foot lengths in an automatic oxyacetylene pressure-welding machine. The E. J. & E. began installing welded rail in 1943, and by the end of this year will have 90 miles of track with continuous rail. A detailed account of the installation of these welded rails on the E. J. & E. appeared in *Railway Age* September 18, 1948, page 62

FREIGHT CARS

The **Bessemer & Lake Erie** has ordered 500 70-ton ore cars from the Greenville Steel Car Company. The inquiry for these cars was reported in *Railway Age* of August 27, page 58.

The **Minneapolis, St. Paul & Saulte Ste. Marie** has been authorized by its board of directors to build 600 freight cars of various types in connection with its 1952 equipment program. The cars are to be built in the road's Fond du Lac, Wis., shops.

LOCOMOTIVES

N. Y. C. Orders 261 Diesel Units Costing $35,000,000

The New York Central has placed orders for 261 diesel-electric locomotive units, including 24 for the Pittsburgh & Lake Erie, costing approximately $35,000,000. Deliveries are expected to begin in the second quarter of next year and to be completed early in 1953. The new units will increase diesel ownership of the Central and its affiliates to 1,915 units with a total of 2,446,100 hp.

The new orders were placed as follows: Electro-Motive Division of General Motors Corporaton—32 1,500-hp. "A" and 32 1,500-hp. "B" freight units and 40 1,200-hp. and 20 800-hp. yard-switching units; American Locomotive-General Electric Companies—35 1,600-hp. road-switching and 43 1,000-hp. yard-switching units; Baldwin-Lima-Hamilton Corporation—18 1,200-hp. yard-switching units; Fairbanks, Morse & Co.—17 1,200-hp. yard-switching units. For the P. & L. E., Electro-Motive will build 12 1,500-hp. road-switching and 10 1,200-hp. yard-switching units and Alco-G.E. will construct two 2,250-hp. "A" passenger units.

The **Maine Central** has ordered one 1,000-hp. diesel-electric switching locomotive unit from the American Locomotive-General Electric Companies. Delivery is scheduled for next December.

SIGNALING

The **Richmond, Fredericksburg & Potomac** has ordered from the Union Switch & Signal Division of Westinghouse Air Brake Company material to install two interlockings near Quantico, Va., to be controlled remotely from the existing style C control machine at Richmond, Va., ap-

Locomotives

Purchaser	No.	Type	Issue Reported	Builder
A. & St. A.B.	2	1,500-hp.	Sept. 3	Electro-Motive
B. & M.	11	1,600-hp. Rd.-Sw.	Sept. 10	American-G.E.
	12	660-hp. Switching	Sept. 10	American-G.E.
	7	1,200-hp. Switching	Sept. 10	Electro-Motive
	9	1,500-hp. Rd.-Sw.	Sept. 10	Electro-Motive
M.-K.-T.	10	1,200-hp. Switching	Sept. 24	Electro-Motive
	10	1,200-hp. Switching	Sept. 24	Baldwin-Lima-Hamilton
Montour	4	1,200-hp.	Sept. 24	Electro-Motive
St. L., S.W.	4	1,600-hp. Rd.-Sw.	Sept. 24	American-G.E.
S.A.L.	15	1,500-hp. Freight	Sept. 17	Electro-Motive
	10*	1,600-hp. Passenger	Sept. 17	American-G.E.
T.P. & W.	2	1,500-hp. Rd.-Sw.	Sept. 3	Electro-Motive
Union	11	1,200-hp. Switching	Sept. 24	Electro-Motive

* Originally and erroneously reported to *Railway Age* as ordered from the Electro-Motive Division of General Motors Corporation.

Freight Cars

B.R.E.	100	50-ton Refrigerator	Sept. 10	Pacific Car & Fdy.
N. & W.	1,000	70-ton Gondola	Sept. 24	Virginia Bridge
S.A.L.	400	70-ton Cement	Sept. 17	Pullman-Standard
	600	50-ton Gondola	Sept. 17	Pullman-Standard
T. & P.	25	Caboose	Sept. 17	R.R. Shops
W.F.E.	300	Refrigerator	Sept. 10	Pacific Car & Fdy.

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Monon's "wheel of progress" moved fast during those pace-setting years of modernization, yet every forward step was based upon sound building. And each new spoke has played an important part in the advancement that has been made. Together they offer you "service with a plus" on all shipments into, out of, or by way of Indiana. A trial shipment will convince you that "Monon means Business."

MONON

THE HOOSIER LINE

CHICAGO, INDIANAPOLIS AND LOUISVILLE RAILWAY COMPANY

proximately 80 miles distant. At present, interlockings at Milford, Va., and South Milford, and holding signals at Quantico are remotely controlled from the Richmond machine, utilizing the broad-band, narrow-band coded carrier control system and form 510 single-station time code control system. The new order includes form 510 code equipment, apparatus to add controls to the existing machine, styles R-2 high and N-2 dwarf signals, A-5 electro-pneumatic switch machines, relays, rectifiers, transformers, code transmitters, decoders and housings. Field installation will be handled by railroad forces.

SUPPLY TRADE

The **H. K. Porter Company** has acquired the **Buffalo Steel Company,** thus increasing its steel production capacity to over 200,000 tons. The purchase price was not revealed.

Arthur N. Dugan, vice-president of the National Bearing Division of the **American Brake Shoe Company,** has retired. He will continue his connection with the company as a consultant. **Pearce D. Smith,** sales representative for the division, has transferred from Pittsburgh to company headquarters, 230 Park avenue, New York.

John H. Barnhart, formerly assistant to the traffic manager of the H. J. Heinz Company, has been named assistant traffic manager of **Hubbard & Co.**

Luria Brothers & Co. has appointed **Charles R. Ritter** as general traffic manager. **Edward J. Bolton** succeeds Mr. Ritter as traffic manager.

James R. Elsinger has been transferred to the Baltimore district of the **Signode Steel Strapping Company.** Mr. Elsinger will service North Carolina and part of Virginia.

F. C. Anderson has been appointed chief engineer of the Edison Storage Battery Division of **Thomas A. Edison, Inc.,** to succeed the late **Walter H. Patterson.** Mr. Anderson, formerly assistant chief engineer of the division, first joined the firm in 1931. In July 1946 he resigned to become chief engineer of the Storage Battery division of Baker & Co., but rejoined Edison last July.

The **American Hoist & Derrick Co.** has announced appointment of the **Peerless Equipment Company** as its exclusive railroad supply agent. Peerless will handle American Hoist business with practically all railroads that headquarter in the Chicago area.

Charles E. Wilson, sales vice-president of the **Worthington Pump & Machinery Corp.,** has been appointed a West Coast consultant on sales problems. Mr. Wilson retired from his former position and activities in corporation affairs on October 1, but will continue in a consulting capacity at Worthington's offices in Los Angeles, San Francisco, Seattle and Salt Lake City.

Arthur J. Doyle and **James D. Ryan** have been elected vice-presidents of the **Camel Sales Company,** wholly owned subsidiary of the **Youngstown Steel Door Company.** Mr. Doyle has resigned as assistant vice-president of the parent firm. Mr. Ryan formerly was assistant vice-president of Camel Sales. Election of **Emmett P. Dowling, Jr.,** formerly an employee of Youngstown Steel Door, as an assistant vice-president of Camel Sales, also has been announced.

OBITUARY

Mrs. Ida R. Simmons, a director of the Simmons-Boardman Publishing Corporation, publishers of *Railway Age,* died on September 20 at her home in New Rochelle, N. Y., at the age of 66. Mrs. Simmons was a former employee of the publishing company, having joined its service while still in her 'teens. In 1914 she was married to the late Colonel Edward A. Simmons, then president of the company. Following his death in 1931, she was elected a member of the directorate and thereafter maintained an active association with the company, in which she held a large stock interest.

John P. Roberts, assistant general manager of the Service Sales Division of the Timken Roller Bearing Company, was killed in an automobile accident near Spruce Pine, N. C., on September 19.

ORGANIZATIONS

National Safety Congress To Be Held October 8-12

The 39th National Safety Congress will be held in the Stevens, Congress, La Salle, Palmer House and Morrison Hotels in Chicago, October 8-12. The safety exposition, held each year in connection with the congress, will feature 188 displays by manufacturers of safety and allied equipment. Because no one exhibition hall is large enough to hold the exposition, the displays will be divided between the exhibition hall of the Congress Hotel and the Casino Room of the Stevens; both will be open daily from 8:30 a.m. until 5:30 p.m.

The Railroad Section of the Council will meet in the Mural Room of the Morrison on the afternoons of October 9, 10 and 11 beginning at 2 p.m. Among speakers scheduled to address the section are William White, president, Delaware, Lackawanna & Western; D. W. Brosnan, general manager, Southern; Robert J. Stone, vice-president—operations, St. Louis-San Francisco, and G. J. Willingham, director of personnel, Illinois Central. The section's chairman, J. R. Thexton, superintendent of safety, D.L.&W., will preside over all three sessions.

The **New York Chapter** of the **National Defense Transportation Association** will hold the first meeting of its 1951-52 season in the Hotel Statler at 7:45 p.m., October 5. Col. S. H. Bingham, chairman of the Board of Transportation of the City of New York, will be the principal speaker, discussing "Transportation and Civil Defense."

CONSTRUCTION

Atlantic Coast Line.—The following projects have been authorized at the indicated probable costs: Relocating main track near Douglas, Ga. ($211,594); track facilities, Achan, Fla. ($94,386); and extending yard leads, Lakeland, Fla. ($44,796).

Baltimore & Ohio.—A new station and office building will be built in the vicinity of Grant and Water streets, Pittsburgh, to replace the present station at Smithfield and Water streets. All B. & O. offices, except the city ticket office in the Union Trust building, will be located in the new terminal. A Pittsburgh firm—Hunting, Larsen & Dunnells—has been retained to prepare architectual and engineering plans for the new structure.

Baltimore & Ohio.—Contracts have been awarded to the: Empire Construction Company, Baltimore, for Locust Point pier improvements; and the Steiner Construction Company, Baltimore, for platforms and drainage for the new Mt. Royal Station. Estimated total cost of the two contracts is $550,000.

Central of New Jersey.—A contract has been awarded to William Heck, Wilkes-Barre, Pa., for a signal tower at Franklin Junction, Pa., to cost an estimated $28,400.

Illinois Central—St. Louis-San Francisco.—More than $500,000 will be expended on improvements at East Thomas yard, Birmingham, Ala., by these two roads, to enlarge the capacity of the yard and permit faster handling of cars. East Thomas yard is operated as a part of the Birmingham joint terminal; the north half of the yard is owned by the Illinois Central; the south half is owned by the Bir-

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5,000 MILES SERVING:

Missouri	Oklahoma	Mississippi
Kansas	Texas	Alabama
Arkansas	Tennessee	Florida

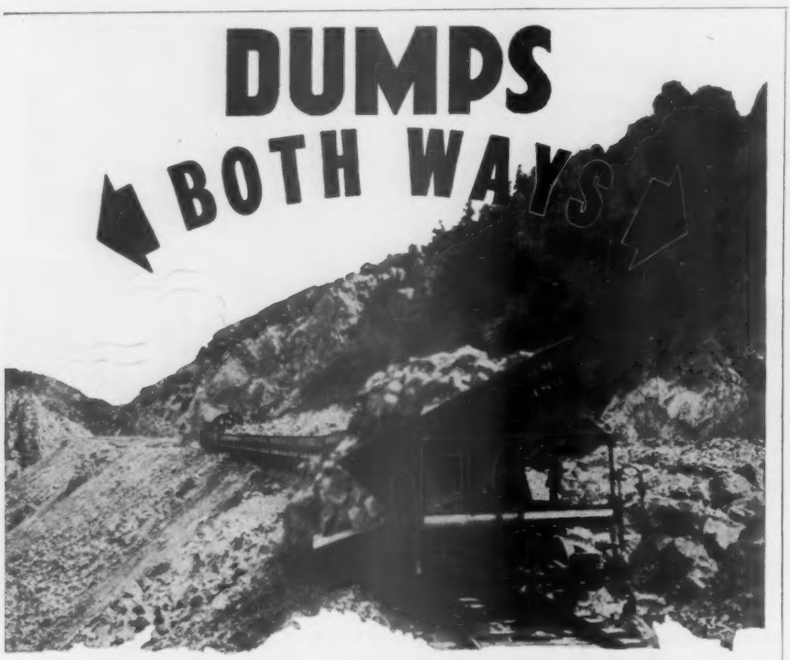
FRISCO

mingham Belt and leased to the Frisco. The volume of traffic handled has increased to such an extent that present facilities are no longer adequate and delayed handling of cars and increased operating costs have resulted.

The plan calls for construction — on the I.C. side of the yard — of approximately 15,100 linear feet of track consisting of three long tracks, a new scale and caboose track, rearrangement of several crossovers, and extension of a number of other tracks. These changes will increase the capacity of the I.C. portion of the yard by some 250 cars. On the Frisco side, plans call for construction of one long track and extension of several other tracks, construction of a pedestrian subway, and a new yard office. These changes will increase the capacity of the Frisco yard by about 300 cars.

In addition to track changes, floodlighting and a communication system will be installed over the entire yard. The net cost of the improvements has been estimated at $212,460 for the I.C. and $326,828 for the Frisco.

Pennsylvania.—A contract has been awarded to Rochez Brothers, Pittsburgh, for diesel oil storage facilities at Conway, Pa., to cost an estimated $105,000.



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Reading.—The following contracts, at the indicated estimated costs, have been awarded: To McDowell Company, Cleveland, for reconstructing car dumper at Port Reading, N. J. ($300,000); to George W. Rogers Company, New York, for removing debris and rebuilding car dumper pier at Port Reading ($200,000); to T. F. Scholes, Reading, Pa., for track construction at Morrisville, Bridge, Pa. ($125,000); and to Henry S. Rau Company, Philadelphia, for repairs to grain elevator at Port Richmond, Pa. ($40,000).

Richmond, Fredericksburg & Potomac.—A contract has been awarded to Sutton & Co., Radford, Va., for grading at Possum Point, Va., to cost an estimated $40,000. A project to construct industrial trackage at the Acca locomotive terminal at a probable cost of $28,000 has been authorized.

Southern Pacific.—Division 4 of the I.C.C. has approved this road's application for authority to construct new trackage totaling 8.56 miles in the vicinity of Los Angeles. Estimated total cost of the project is $3,995,262, including $1,156,345 for bridges, trestles and culverts and $252,045 for signals and interlocking. Division 4 also approved a proposed 50-year agreement under which the S.P. will operate over approximately 6.5 miles of the Union Pacific in the same Los Angeles area. The new trackage, together with the trackage rights, will enable the S.P. to bypass Los Angeles with through traffic and relieve congestion in freight yards in that city.

The I.C.C. also has given its approval to plans for relocating this road's line between Polvo, Ariz., and Vail. Such plans contemplate construction by the federal government of a new 14-mile line to replace the present 13.5-mile line which is in the way of a proposed extension of runways at the Air Force's Davis-Monthan base near Tucson. (*Railway Age*, July 2, page 81.)

FINANCIAL

Chicago & Eastern Illinois.—*New Lines to Joppa, Ill.*—Acting on a motion by this road, the I.C.C. has consolidated into one proceeding the pending applications of Chicago, Burlington & Quincy and Cleveland, Cincinnati, Chicago & St. Louis (New York Central) for authority to construct rail lines into Joppa, Ill. The C.&E.I., which already serves Joppa, is opposing both applications. A large steam generating plant is being constructed at Joppa which, in operation,

the New

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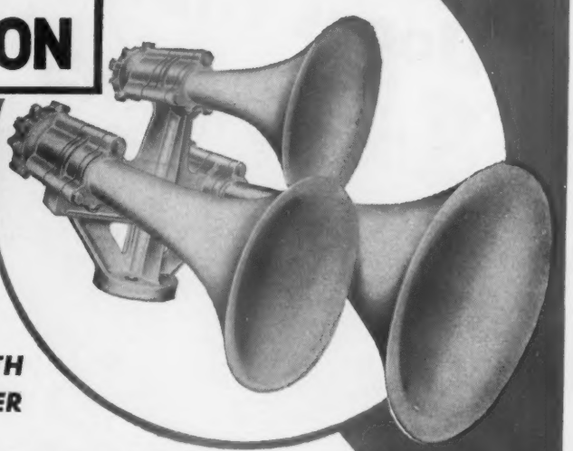

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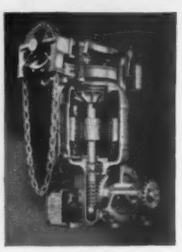

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By opening straight upward with spring-counterbalanced action, they provide smooth, easy operation under all conditions. They can be equipped for manual, mechanical, or electrical control. Motor operated doors can be equipped with any number of remote control switches, for maximum convenience. Kinnear Doors are built in any size, for easy installation in old or new buildings. Write for complete information.

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SAVING WAYS IN DOORWAYS **KINNEAR** ROLLING DOORS

will use an estimated 6,500 tons of coal per day.

New York, Chicago & St. Louis.—*Stock Split.*—The I.C.C.'s Division 4 has approved this road's plan for splitting its common stock on a five-for-one basis. The road is also authorized to issue new Series A cumulative preferred stock, on a share-for-share basis, for its present preferred. The latter exchange will clar up voting rights and redemption provisions, and is intended to give more flexibility in carrying out any future preferred stock financing. As to the common stock, the road is authorized to issue 2,481,245 shares of $20 par, in exchange for 496,249 shares of $100 par. Total par value of the road's issue of common stock is $49,624,900 while par on the preferred totals $36,098,500. (*Railway Age*, April 9, page 74.)

Smithfield Terminal.—*Reorganization.*—The I.C.C. has ratified appointment of Lewis A. McMurran as trustee of this company. Reorganization proceedings are pending in the U. S. District Court for the Eastern District of Virginia.

New Securities

Application has been filed with the I.C.C. by:

LOUISVILLE & NASHVILLE.—To assume liability for $7,800,000 of series K equipment trust certificates to finance in part 47 diesel-electric locomotives and 400 freight cars. Estimated total cost of this equipment is $9,751,609.

	Equipment and Builder	Estimated Unit Cost
21	1,600-hp. road freight lead locomotives (American Locomotive-General Electric Companies)	$163,228
5	1,600-hp. road freight lead locomotives (Alco-G.E.)	170,753
3	1,600-hp. road freight booster locomotives (Alco-G.E.)	149,638
10	1,600-hp. road-switching locomotives (Alco-G.E.)	146,135
8	1,000-hp. yard switching locomotives (Alco-G.E.)	101,137
300	50-ton box cars (Pressed Steel Car Company)	6,877
100	70-ton covered hopper cars (Pullman-Standard Car Manufacturing Company)	6,875

The certificates would be dated September 15, and would mature in 15 annual installments of $520,000 each, beginning September 15, 1952. They would be sold by competitive bids, with the interest rate to be set by such bids.

Division 4 of the I.C.C. has **authorized:**

TEXAS & PACIFIC.—To assume liability for $2,900,000 of series M equipment trust certificates, to finance in part six diesel-electric locomotives and 450 freight cars. Estimated total cost of this equipment is $3,949,600. (*Railway Age*, September 3, page 90.) Division 4 approved sale of the certificates for 98.624, with interest at 2½ per cent—the bid of Salomon Bros. & Hutzler and three associates—which will make the average annual cost of the proceeds approximately 2.8 per cent. The certificates, to be dated October 1, will mature in 10 annual installments of $290,000 each, beginning October 1, 1952. The certificates were reoffered to the public at prices yielding from 2.25 to 2.85 per cent, according to maturity.

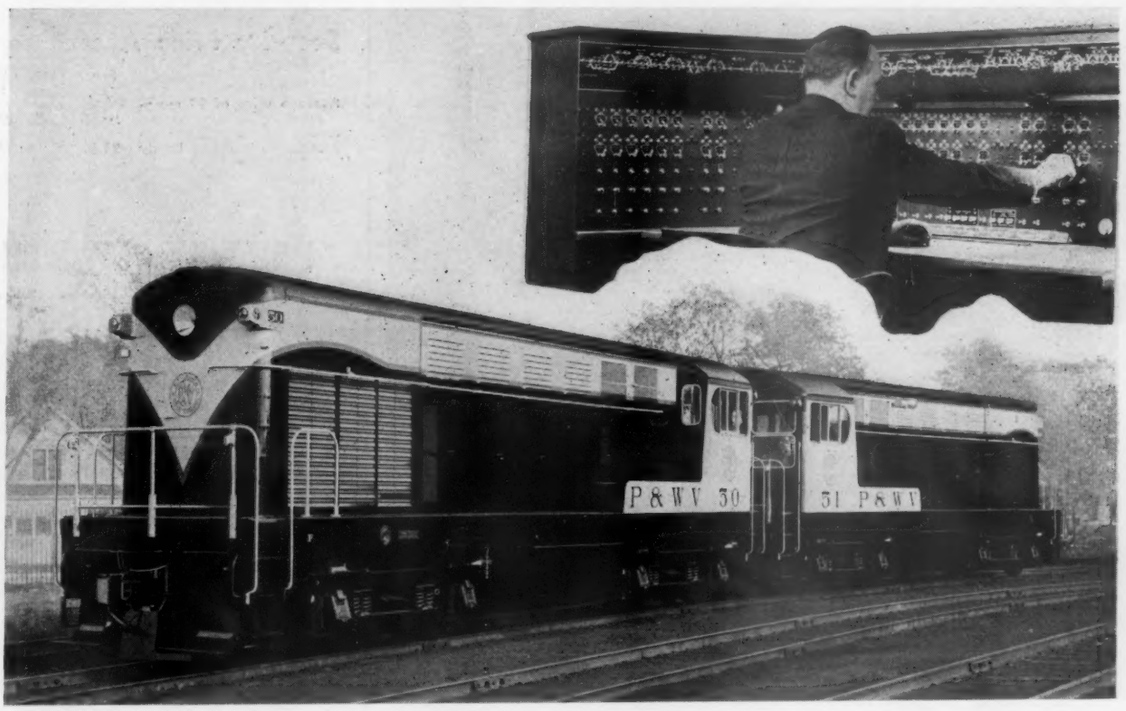
Dividends Declared

ATCHISON, TOPEKA & SANTA FE.—$1, quarterly, and 50c, extra, on new common, after two-for-one split, payable December 8 to holders of record October 19.

BESSEMER & LAKE ERIE.—preferred, 75c, semi-annual, payable October 1 to holders of record September 15.

CAROLINA, CLINCHFIELD & OHIO.—$1.25,

The Pittsburgh & West Virginia Railway Company



Modern

- OPERATIONS
- MOTIVE POWER
- EQUIPMENT
- ROAD

PITTSBURGH & WEST VIRGINIA RAILWAY

—welcome the opportunity to serve you

protect

- passengers
- performance
- profits

LORD VIBRATION-CONTROL MOUNTINGS

LORD Vibration-Control Mountings are standard equipment on the new G. E. Diesel-Electric Undercar Power Plants. They insure pleasure and comfort by protecting passengers from disturbing engine noise and vibration. Performance is so efficient that passengers seldom realize that a power plant is operating beneath the car.

These LORD Mountings also protect the power plant from road shock . . . enabling it to operate smoothly and efficiently without interference. Instruments and automatic controls maintain original accuracy . . . require fewer adjustments . . . are more dependable . . . need less maintenance. Lower maintenance costs mean more profit to the operator.

If vibration is affecting your product's performance—and costing you sales—now is the time to investigate LORD Vibration-Control Mountings. For information, or for assistance in selecting and applying LORD Mountings, write to attention of Product and Sales Engineering Department.

LORD MANUFACTURING COMPANY • ERIE, PA.

LORD BONDED RUBBER

Vibration-Control Mountings . . . Bonded-Rubber Parts

quarterly, payable October 20 to holders of record October 10.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—preferred, $1.25, quarterly, payable October 31 to holders of record October 10.

LAKE SUPERIOR & ISHPEMING.—35c, quarterly, increased, payable October 15 to holders of record October 1.

NORFOLK & WESTERN.—4% adjustment preferred, 25c, payable November 9 to holders of record October 17.

PIEDMONT & NORTHERN.—75c, quarterly, payable October 20 to holders of record October 5.

READING.—50c, quarterly, payable November 8 to holders of record October 11.

SAVANNAH & ATLANTA.—5% preferred, $1.25, quarterly, payable October 1 to holders of record September 12.

VERMONT & MASSACHUSETTS.—$3, semiannual, payable October 8 to holders of record September 25.

Security Price Averages

	Sept. 25	Prev. Week	Last Year
Average price of 20 representative railway stocks	56.48	55.20	47.43
Average price of 20 representative railway bonds	93.86	93.99	95.73

RAILWAY OFFICERS

EXECUTIVE

Walter G. Abriel, manager of personnel of the NEW YORK CENTRAL SYSTEM, has been appointed assistant vice-president, personnel and public relations, with headquarters as before at New York. Mr. Abriel was born in 1886 at New Concord, N. Y., and entered railroad service in 1902 with the Delaware & Hudson. He joined the

Walter G. Abriel

N.Y.C. in 1904 as a telegrapher at Towners, N. Y., and subsequently served as train dispatcher, assistant supervisor in the wage bureau, chief clerk to vice-president of personnel, assistant to vice-president of personnel and assistant manager of personnel. Mr. Abriel was appointed manager of personnel on August 1, 1943.

A. Y. Alcorn, assistant general freight agent of the SOUTHERN PACIFIC at Portland, Ore., has been appointed assistant to vice-president, system freight traffic, at San Francisco.

R. E. Moore has been appointed assistant to vice-president of finance and accounting of the SEABOARD AIR LINE at Norfolk, Va., succeeding **W. V. Lawrence,** who has been appointed assistant comptroller. **E. T. Amis,** auditor of disbursements at Portsmouth, Va., has also been appointed assistant to vice-president of

R. E. Moore

finance and accounting. A biography of Mr. Amis was published in *Railway Age,* January 15, page 256. **H. L. Jennings** has been named auditor of disbursements to succeed Mr. Amis. The position of assistant comptroller, which Mr. Jennings formerly held, has been abolished.

Mr. Moore was born at Portsmouth and began his association with the S.A.L. in 1925, holding various assign-

E. T. Amis

ments in the finance and accounting department until 1931. He became assistant general bookkeeper in 1937 and served as assistant to chief accounting officer from 1943 to 1946, when he became assistant to the comptroller. He held the latter position until November 1950, when he was appointed office assistant to the vice-president of finance and accounting.

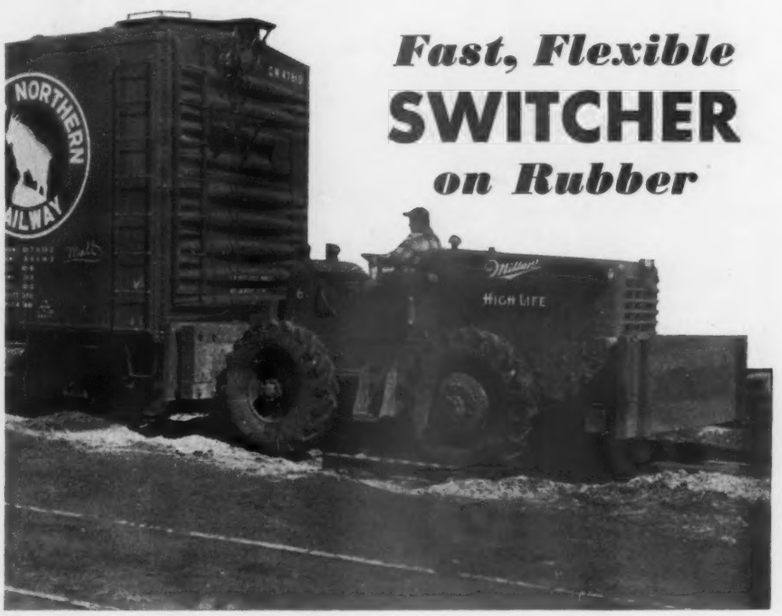
Ralph C. Champlin, formerly director of public relations of the Ethyl Corporation, has been appointed to the newly created position of vice-president in charge of public relations of the PENNSYLVANIA.

FINANCIAL, LEGAL & ACCOUNTING

The MILWAUKEE has appointed **L. R. Norberg** as assistant tax commissioner, a new position, with headquarters at Chicago. **E. J. Notske** has been appointed to a similar position in Seattle, succeeding the late **J. R. Cummings.**

Norman F. Lincoln has been named assistant treasurer of the ST. LOUIS-SAN FRANCISCO to succeed the late **W. Boyd Fletcher. Harry Ragland** succeeds Mr. Lincoln in his former position of cashier.

W. V. Lawrence, assistant to vice-president of finance and accounting of the SEABOARD AIR LINE at Norfolk, Va., has been named assistant comptroller, to succeed the late **Carol W. Powell,** who died on July 31. **C. C. Wimmer,** assistant comptroller at Norfolk, has voluntarily requested



Fast, Flexible SWITCHER on Rubber

Here is the most unusual Switcher you've ever seen . . . a big, rugged 4-wheel drive PAYLOADER specifically designed and constructed for car switching — at railroad yards, terminals, docks and industrial yards.

The PAYLOADER walks right across tracks and yard to reach a string of cars by the shortest, quickest route. It can push or pull in either direction because it has four wheel drive and full-reversing transmission with four speeds forward and four reverse. It can also push or pull from alongside the cars.

This switcher is equipped with a 75 horsepower engine, either gasoline or diesel, and its 11 tons of weight on large pneumatic earth-mover tires gives it tremendous tractive effort—far more than can be obtained with equivalent rail-mounted equipment. Short wheel base, power-boosted steering and powerful hydraulic brakes provide extreme maneuverability, ease of control and safety.

Keep traffic flowing — get full facts on the PAYLOADER way to switch and move cars faster, at lower cost. The Frank G. Hough Co., 769 Sunnyside Avenue, Libertyville, Illinois.

JOB STUDY No. 18 is a complete, authorized picture-and-word report on the uses of PAYLOADERS and PAYLOADER Switchers by a large brewery. It's available without obligation if requested on your letterhead.

PAYLOADER®
THE FRANK G. HOUGH CO. · Since 1920

inactive duty and will be retired formally in December. Mr. Lawrence, now the only assistant comptroller the line has, is a native of Portsmouth, Va. He began his career with the S.A.L. in 1916 and has served continuously in the accounting and finance department. He became assistant to vice-president of finance and accounting in 1946.

W. V. Lawrence

Mr. Wimmer is closing a railroad career that began with other rail lines in 1906 and that brought him to the Seaboard in 1912 as a claim clerk at Tampa, Fla. He transferred to Portsmouth in 1915 and since that time has held increasingly responsible positions in the finance and accounting department, culminating in his promotion to assistant comptroller in 1946.

OPERATING

R. F. Robinson has been appointed manager of merchandise traffic for the SOUTHERN PACIFIC at San Francisco.

C. W. Ruffner has been appointed assistant to general manager of the FORT WORTH & DENVER and the WICHITA VALLEY at Fort Worth, Tex. The position of assistant to vice-president and general manager has been abolished.

W. D. Lamprecht has been appointed assistant general manager of the SOUTHERN PACIFIC, with headquarters in San Francisco. He succeeds the late **H. R. Hughes.**

E. E. Welsh, assistant superintendent of the WESTERN MARYLAND, has been appointed superintendent, with headquarters as before at Hagerstown, Md., succeeding **J. A. Abbott,** who has retired, after 47 years of service. The position of assistant superintendent has been abolished. **L. M. Moser** has been appointed trainmaster at Hagerstown. Mr. Abbott was born at Everett, Pa., on February 11, 1888, and entered railroad service on November 23, 1904, as telegraph operator on the W.M. He subsequently served as dispatcher, chief dispatcher, assistant trainmaster and trainmaster. Mr. Abbott became superintendent of the Elkins division in June 1934 and transferred to the Hagerstown division in May 1937.

TRAFFIC

The NORTHWESTERN PACIFIC has appointed **T. E. Hewitt** as district freight agent at San Francisco.

Harold A. Mason has been appointed general agent for the CHICAGO & NORTH WESTERN at Winnipeg, Man.

F. J. Zika, assistant general freight agent of the SOUTHERN PACIFIC at Portland, Ore., has been appointed to succeed **A. Y. Alcorn,** with the same title and headquarters as heretofore. Mr. Alcorn's appointment as assistant to vice-president, system freight traffic, at San Francisco, is noted elsewhere in this issue. **E. C. Ordway,** district freight agent at Eugene, Ore., succeeds Mr. Zika. **Harry Fee,** district freight and passenger agent at Klamath Falls, replaces Mr. Ordway, and is succeeded by **G. W. Morgan,** general agent at Spokane, Wash. **T. J. McCarry,** assistant district freight and passenger agent at Roseburg, Ore., replaces Mr. Morgan at Spokane. **R. A. Houck,** district freight agent at Fresno, Cal., has been appointed assistant to freight traffic manager—Central district, at San Francisco. **W. W. Hazelrigg** has been appointed general agent, merchandise traffic, at San Francisco, succeeding **C. E. Ward,** who replaces Mr. Houck at Fresno.

The GREAT NORTHERN has appointed **E. F. McGuire** as assistant general freight agent at St. Paul.

The CHICAGO GREAT WESTERN has announced the following changes in its traffic department: **C. E. Dingler** appointed general agent at Pittsburgh, succeeding **G. W. Boyle,** resigned; **A. C. Word** appointed general agent at Cincinnati, succeeding **F. L. Hayworth,** resigned; **E. O. Tweet** appointed general agent at Des Moines, Iowa; **R. H. Gustafson** to succeed Mr. Tweet as general agent at Milwaukee; **J. F. Parkison** to succeed Mr. Gustafson as general agent at Indianapolis, and **H. D. Goodwin** appointed general agent at Waterloo, Iowa, succeeding the late **G. P. Roberts.**

Stephen A. Clifford, general freight agent of the RUTLAND, has

Complete loudspeaker paging and two-way communicating systems for classification yards, terminal facilities, mail and baggage handling facilities, passenger stations, freight stations, engine houses, interlocking towers, car checking service, and for Dispatcher's and other low level telephone type line applications.

- Control consoles
  Direct two-way communicating equipment
  Low level line two-way communicating equipment
  Intercommunicating systems
  Paging systems
- Portable sound systems
  Pre-amplifiers
  Power amplifiers
  Way station amplifiers
  Dispatcher's transmitter and receiver units
- Telephone line concentration units
  Telephone line monitoring units
  Remotely controlled systems
  Automatic volume level compensating units
  Time and emergency signal devices
- Microphones
  Loudspeakers
  Weatherproof control units
  Switch and jack box assemblies
  Equipment cabinets
- Power supply units
  Relays — switches — transformers
  Speech frequency band-pass filters
  Wire — cable
  Control equipment for special applications
  Portable tape recorders

R. W. NEILL COMPANY
MANUFACTURERS • ENGINEERS
1811 CARROLL AVENUE, CHICAGO 12, ILLINOIS

been appointed assistant freight traffic manager, with headquarters as before at Rutland, Vt.

PURCHASES & STORES

G. H. Walder, chief purchasing officer of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC at Chicago, has retired from active duty after 39 years of service with that road. His successor is **V. E. McCoy,** who has been assistant chief purchasing officer since June. A biography of Mr. McCoy was published in *Railway Age* July 2, page 93. **W. C. Lummer** has been appointed district storekeeper, with jurisdiction over the stores department with respect to the road's terminals and shops in Milwaukee.

MECHANICAL

The MISSOURI PACIFIC has announced the following jurisdictional changes involving officers of its mechanical department: **U. F. Tihen,** master mechanic, St. Louis, to have jurisdiction over the St. Louis Terminal division (west side of river); **R. Kling,** master mechanic, Nevada, Mo., to have jurisdiction over the Eastern, Joplin and White River divisions; and **J. C. Dietrich,** Coffeeville, Kan., to have jurisdiction over the Southern, Kansas, Central and Wichita divisions.

M. B. Adams has been appointed assistant supervisor of diesel engines for the ATCHISON, TOPEKA & SANTA FE and the PANHANDLE & SANTA FE, with headquarters at Amarillo, Tex. Mr. Adams will have jurisdiction over the Plains division of the P.&S.F. and the Panhandle division of the A.T.&S.F., succeeding **D. M. Miller,** promoted.

E. F. Tuck, master mechanic for the ST. LOUIS-SAN FRANCISCO's Eastern division at Springfield, Mo., has been named assistant superintendent of motive power. **Thomas Murray,** master mechanic at Tulsa, Okla., has been appointed master mechanic for the Southwestern and Western divisions at that point. **George M. Jessee,** general foreman of the west locomotive shop at Springfield, succeeds Mr. Murray, and **R. H. Seamon** has been named assistant master mechanic in charge of the west locomotive shop.

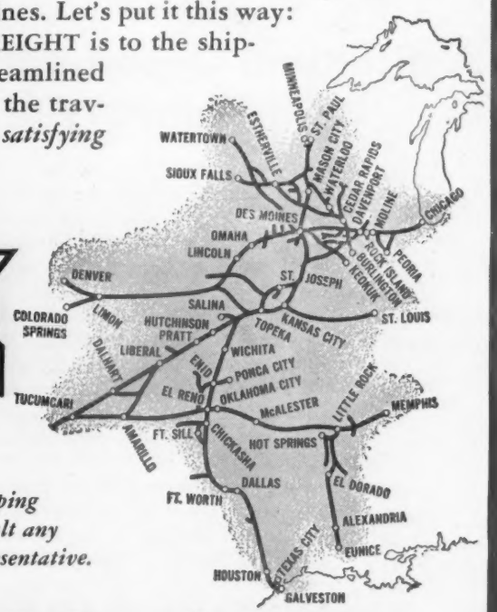
Mr. Tuck entered railroad service as an apprentice machinist in the Cleburne, Tex., shops of the Santa Fe. He came to the Frisco in 1922 as roundhouse foreman at Kansas City and later served as general foreman at Memphis, and in the west locomotive shops in Springfield. He was named master mechanic of the Eastern division in 1947.

Arthur T. Reynolds, division master mechanic of the CANADIAN PACIFIC at Sudbury, Ont., has been trans-

Ever Meet a

ROCKET FREIGHT?

This is one of them. Its job is to haul freight, mountains of it. It assures faster schedules between terminals—quicker service to and from intermediate points. A rugged, diesel-powered beauty, it is a member of that famous fleet of freight trains whose domain is the fourteen mid-continent states served by the Rock Island Lines. Let's put it this way: A ROCKET FREIGHT is to the shipper what a streamlined ROCKET is to the traveler—*a wholly satisfying service.*



Rock Island

For complete shipping information consult any Rock Island representative.

Rock Island Lines

THE ROAD OF PLANNED PROGRESS

ferred to Kenora, Ont., succeeding **J. J. Raby,** whose appointment as master mechanic of the Manitoba district was announced in *Railway Age* September 10.

Bruce C. Gunnell, chief mechanical engineer of the SOUTHERN SYSTEM at Washington, D. C., has been appointed acting superintendent motive power of the Eastern lines at Charlotte, N. C.

George W. Bohannon, chief mechanical officer of the CHICAGO & NORTH WESTERN has been named to fill a newly established position of manager, purchases and stores for the Pullman Company. His appointment becomes effective October 16.

ENGINEERING AND SIGNALING

C. S. Kirkpatrick, chief engineer of the MISSOURI PACIFIC at Houston, Tex., has retired. His luties have been taken over by **F. S. Schwinn,** assistant chief engineer, Houston, and the position formerly held by Mr. Kirkpatrick has been abolished.

W. C. E. Robinson, district engineer of the Ontario district of the CANADIAN PACIFIC, has been promoted to assistant engineer maintenance of way, Eastern region, with headquarters as before at Toronto. **N. M. Kelly,** assistant engineer in the vice-president's office at Toronto, has been appointed to succeed Mr. Robinson.

OBITUARY

H. C. James, manager of advertising of the St. Louis-San Francisco, who died on September 12 in the Frisco Hospital at St. Louis, had been with the Frisco since 1901. He was appointed advertising agent in 1920, after having held a number of clerical and secretarial positions, and was placed in charge of all of the railroad's advertising in 1934

Industrial, Commercial and Agricultural Opportunities in the Territory of the

NORFOLK SOUTHERN RAILWAY CO. NS

If you are interested in a site for a plant or warehousing distribution center, or for the processing of products of agriculture—such as corn, soya beans, and cotton—there are now available in North Carolina and Virginia as served by the Norfolk Southern Railway a number of ideal site locations.

All of these sites are in an area that has (a) supply of efficient labor, (b) large quantities of water from large rivers as well as ground wells, and (c) electric power. There is a friendly community attitude towards industry, and a constant desire on the part of the community to co-operate to the fullest extent with new commercial and industrial activities.

The Norfolk Southern Railway operates a fleet of Diesels, and you are assured of dependable transportation service to and from all sections of the United States.

The Norfolk Southern Railway invites you to submit to it your requirements for plant expansion, warehouses, etcetera, and assurance is given that a confidential brochure will be promptly furnished responsive to your request.

NORFOLK SOUTHERN RAILWAY

J. F. DALTON, *Director of*
Industrial and Agricultural Development
NORFOLK, VIRGINIA

INTERNATIONAL

HIGH GRADE TREATED

5 IC 1 TIES

The International Dating Brand

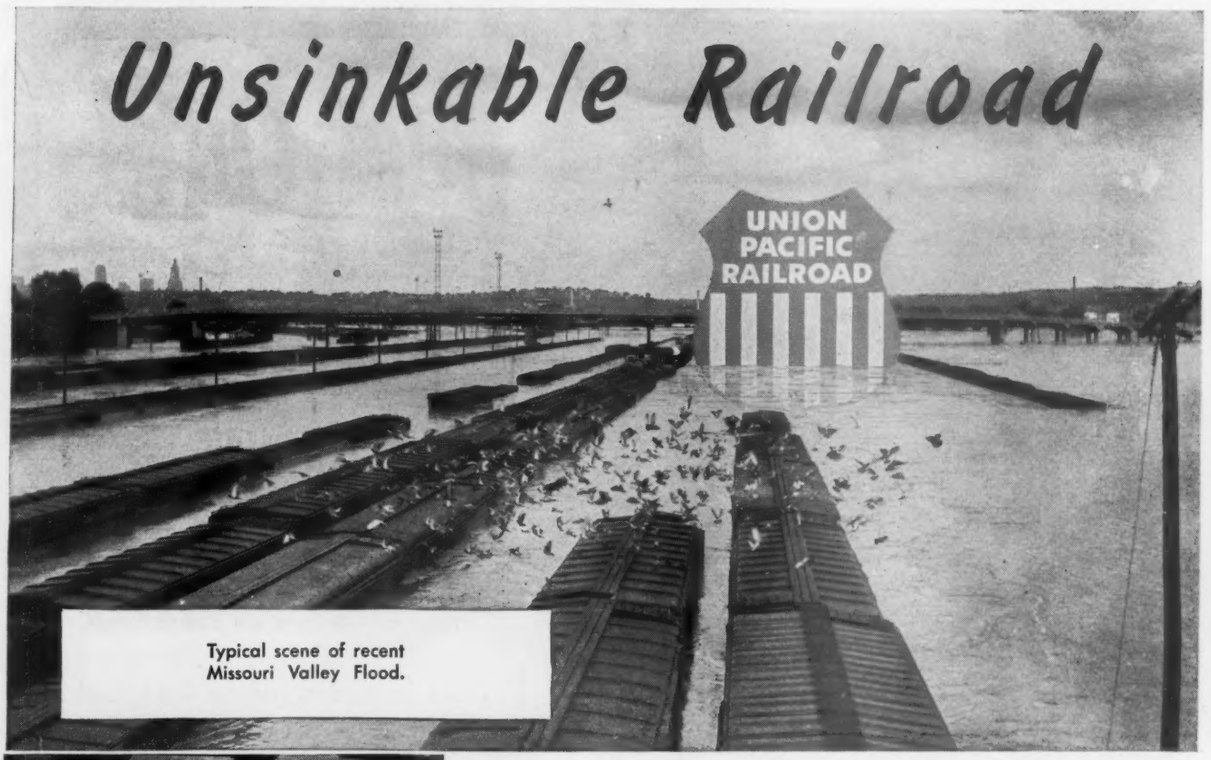
Scientifically conditioned for long life in track, these A.R.E.A. Specification Ties are accurately cut and well-seasoned. International date-branded Ties are lowest in ultimate cost, their quality safeguarded by an organization which has been serving the railroads for more than three-quarters of a century.

INTERNATIONAL CREOSOTING AND CONSTRUCTION CO.

Producers of Treated Ties, Poles, Piles, etc

GALVESTON-BEAUMONT
TEXARKANA

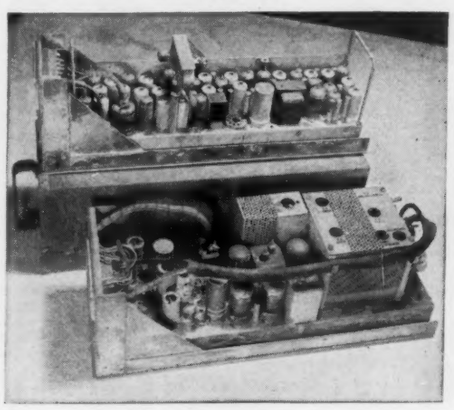
Unsinkable Railroad



Typical scene of recent Missouri Valley Flood.

Muck-laden Motorola units as they came from flooded engines and cabooses.

Components well protected by wax impregnation—require only minor servicing.



—with unsinkable communications

The recent Missouri Valley flood furnished further evidence of Union Pacific foresight!

...and demonstrates again that it takes more than mud and water to hurt Motorola units (for they are built to go through arctic cold, jungle heat, severe shock, dust, dirt and driving rain).

How much damage could those days in the Missouri River do? Just wash off the units, dry thoroughly, make a few minor part replacements and they're back "in business," good as new—with the guaranteed permanent selectivity—with the sealed-in-plastic Permakay wave filters (Motorola-guaranteed for the life of the set)—with 15 nuisance adjustments eliminated with the selectivity performance remaining exactly as the day it left the factory! That's *Reliability—all* the way!

SPECIALISTS IN RAILWAY COMMUNICATIONS

Motorola

4545 Augusta Blvd., Chicago 51
Rogers Majestic Electronics Ltd., Toronto, Canada

Know your valve
Do's and don'ts for better piping service
Variations in stem operation of gate, globe, and angle valves
The different types of bonnet joints on gate, globe, and angle valves
PIPING POINTERS
HELPFUL HINTS ON THE APPLICATION AND MAINTENANCE OF PIPING EQUIPMENT
INCLUDING THE CRANE VALVE SELECTION GUIDE

PIPING POINTERS 16-mm SOUND FILM
Free Usage for Group Training

A 30-minute motion picture that dramatizes the fundamental information in the Piping Pointers Manual. Ideal for classroom or plant training groups. Available on request through your local Crane Branch.

Just Out!

NEW 36-PAGE EDITION OF

PIPING POINTERS

...a bigger, more helpful handbook for training maintenance workers

You asked for ¼ million copies of the last edition of Piping Pointers. You found it a big help in training beginners and refreshing veterans in your piping crews. The bigger and better edition is just out—changed in appearance but not in purpose. Crane again offers this booklet—to help keep your piping systems at peak efficiency.

Piping Pointers talks facts . . . not theory. Thoroughly covers the fundamentals of good, sound, everyday piping practices . . . in easy-to-grasp, nontechnical language. Its many "how-to-do-it" features are illustrated for easy understanding.

Mistakes in piping installation and maintenance cost more today. Piping Pointers can help your men avoid them. Just ask your Crane Representative for a copy.

PARTIAL INDEX TO PIPING POINTERS

HOW TO choose valves for every service . . . install valves . . . read reducing fittings . . . make up screwed joints . . . assemble flanged joints . . . make up solder joints . . . install pressure regulators . . . use vent and drain valves . . . avoid steam trap trouble . . . save on pipe joints and materials . . . handle piping tools.

plus THE CRANE VALVE SELECTION GUIDE
which saves time and effort in selecting valves for common piping services.

CRANE

CRANE CO., *General Offices:*
836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

PENNSYLVANIA RAILROAD NOW EQUIPPING 500 CARS

Cutaway journal box and drawing shows Flex-Pak in position in box.

IN CONTINUATION OF TESTS instituted more than a year ago, the Pennsylvania Railroad is equipping 500 70-Ton Class H21A hopper cars with the Hulson Flex-Pak.

The Hulson Flex-Pak is a new type of journal waste container and retainer of synthetic rubber composition. Compounded to be oil resistant, Flex-Pak provides a resilient cushion holding the waste against the full length of journal at the proper pressure for adequate lubrication under all conditions of transit, impact, and temperature. Flex-Pak replaces approximately ½ of the journal packing.

HULSON CO.

332 SOUTH MICHIGAN AVENUE CHICAGO 4, ILLINOIS

HULSON FLEX-PAK®

A.A.R. APPROVED AND PROTECTED IN INTERCHANGE

We can now supply reasonable quantities of Flex-Pak for 5 x 9, 5½ x 10 and 6 x 11 standard A.A.R. freight car journals.

Application bulletin #1 is now being distributed to our mailing list. Additional copies will be mailed promptly on request.

Are you turning in all your SCRAP?

Don't wait for "George" to do it

IF you are a steel user, this important job of getting more scrap back to the mills is directly up to *you*. You just cannot afford to sit idly by while the scrap shortage gets worse. For unless everyone really pitches into this job of digging out all the scrap possible, steel production is bound to suffer, and every steel user, in more or less degree, will suffer too.

More scrap means *more* steel—it's as simple as that.

Right now some mills have only a bare two-days' supply of scrap on hand. Others have even less. Some steel-making furnaces already have had to shut down for lack of scrap. The situation is serious. Only you can help improve it.

By turning in every piece of worn-out equipment, every obsolete tool and machine, in fact every pound of iron and steel scrap you can comb out of your plant, you'll be helping relieve the worst scrap shortage since Pearl Harbor days . . . and the steel industry will be able to produce more of the steel you need.

Remember—it takes at least one-half ton of scrap to make one ton of steel. To maintain steel's present high production schedules requires more than 1400 carloads of industrial scrap *every* day. So turn in your scrap—ALL your scrap—and keep the mills rolling. This is more than a shortage. It's an emergency that vitally concerns you—and us—and the Nation.

You'll find your local scrap dealers listed in the yellow pages of the phone directory.

This page would ordinarily be used to tell you about

U·S·S HIGH STRENGTH STEELS

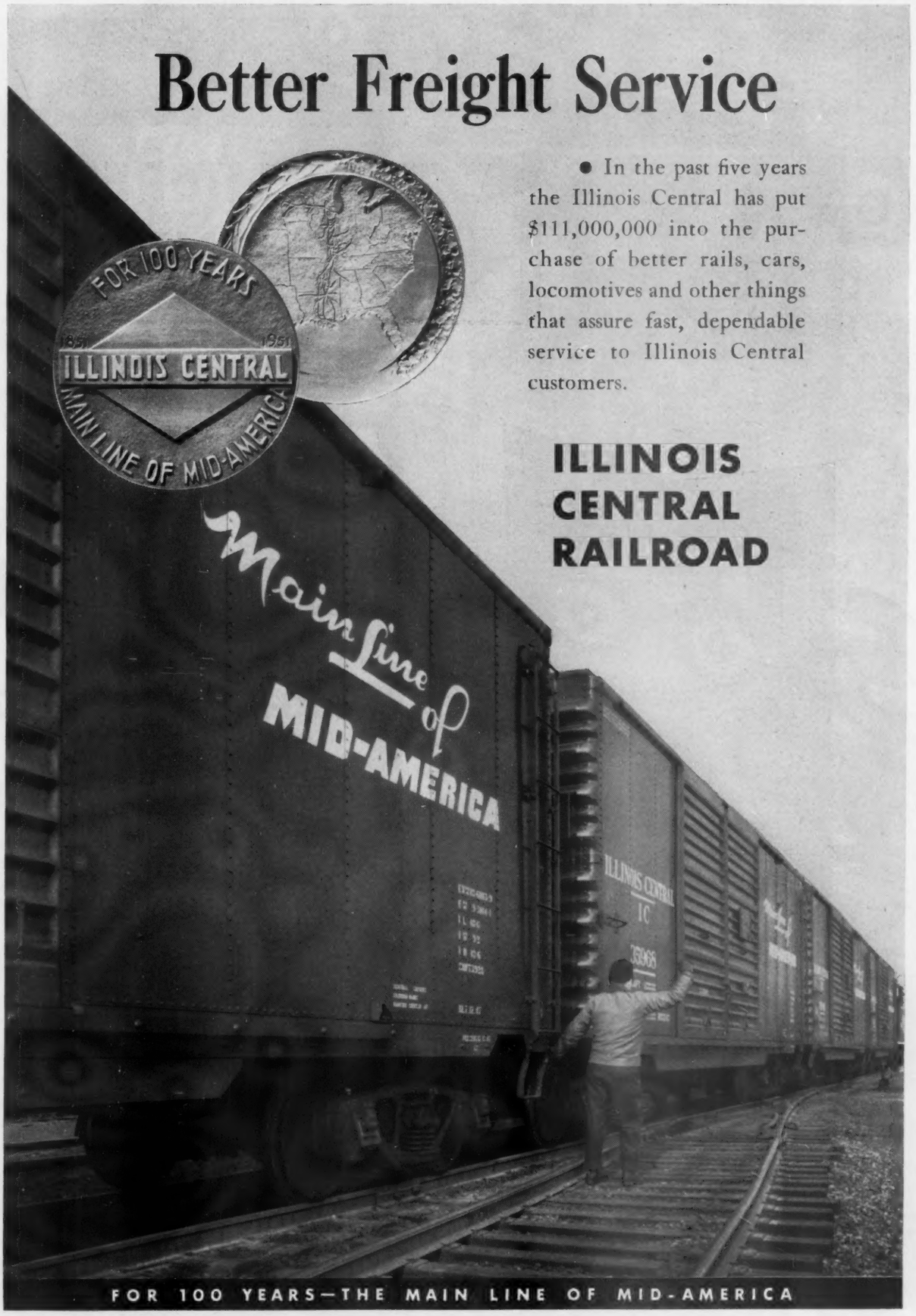
but, because without SCRAP we cannot produce steel, we are asking instead for your all-out help in getting more SCRAP to the mills.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, FAIRFIELD, ALA. · UNITED STATES STEEL COMPANY, PITTSBURGH
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

1-1348

UNITED STATES STEEL

Better Freight Service



• In the past five years the Illinois Central has put $111,000,000 into the purchase of better rails, cars, locomotives and other things that assure fast, dependable service to Illinois Central customers.

ILLINOIS CENTRAL RAILROAD

FOR 100 YEARS—THE MAIN LINE OF MID-AMERICA

THE DOOR DESIGNED

WITH SHIPPERS IN MIND

SUPERIOR CAR DOOR

- TIGHT CLOSING (WEATHER PROOF)
- SMOOTH INSIDE
- BALL BEARING (ONE MAN, ONE HAND OPERATION)
- PILFER PROOF

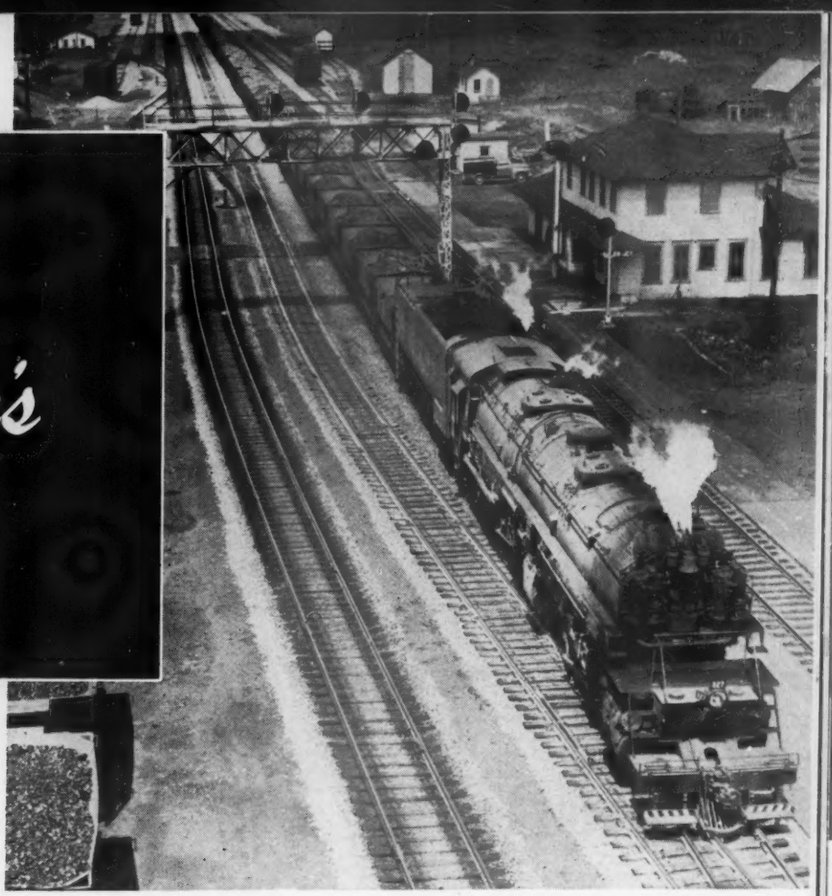
IT DELIVERS THE GOODS

For smoother door action there is nothing like a ball.

SUPERIOR CAR DOOR COMPANY

CHICAGO 4, ILL.

Ore for Democracy's defense



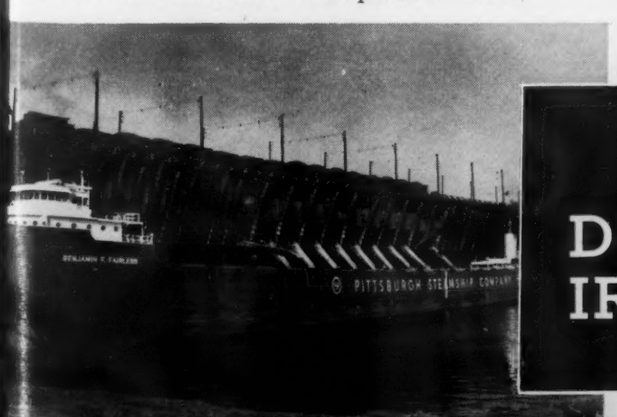
Powered by huge Mallet- type locomotives with 140,000-lb. tractive effort, long D.M.&I.R. trains move the ore from open-pit and deep-shaft mines on the Mesabi and Vermillion ranges to our Lake Superior docks at Duluth and Two Harbors.

SAFETY DULUTH MISSABE AND IRON RANGE FIRST

AGAIN the need for steel to reinforce the defenses of the free world makes particularly significant the specialized role of the D.M.&I.R. in transporting vital iron ore from mine to shipside with speed and safety. Safety is no less important to us than the best possible dispatch, and we take increased pride in the continuity of our long series of safety awards for the lowest employee accident rate among Class I railroads, — the result of a consistent program of study and self-education toward the goal of perfect safety in our operations.

The ore is moved in special type 70-ton hopper cars. At Proctor Yard they are weighed on automatic scales and classified according to grade of ore content, so that in each cut of cars there are specific quantities of iron, phosphorus, silica, and manganese, accurate to a fraction of one per cent.

On the docks the hoppers are untrapped by mechanical wrenches and the ore evenly distributed, through chutes, into the holds of lake vessels which take it straight to the blast furnaces for conversion into precious steel.



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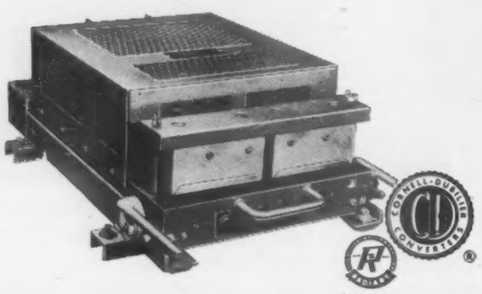

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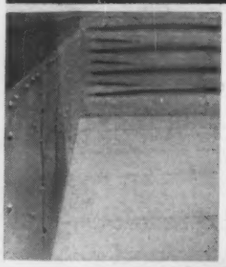

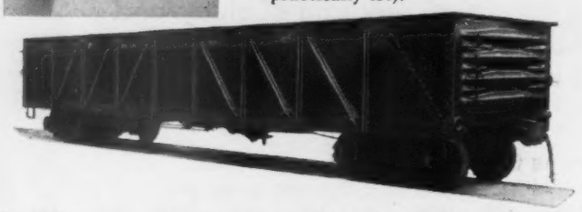

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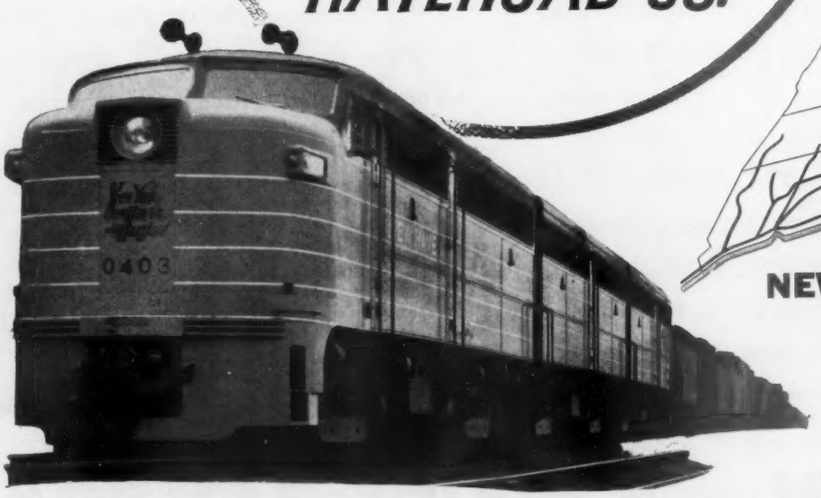

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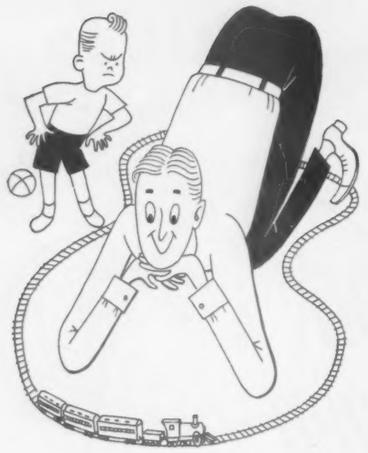

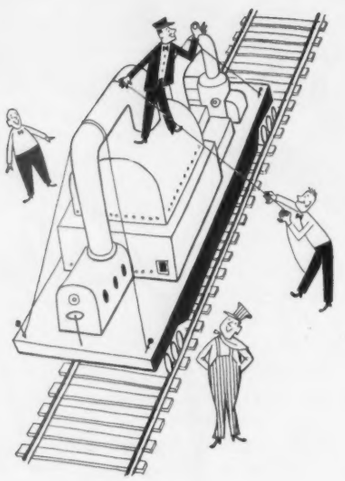

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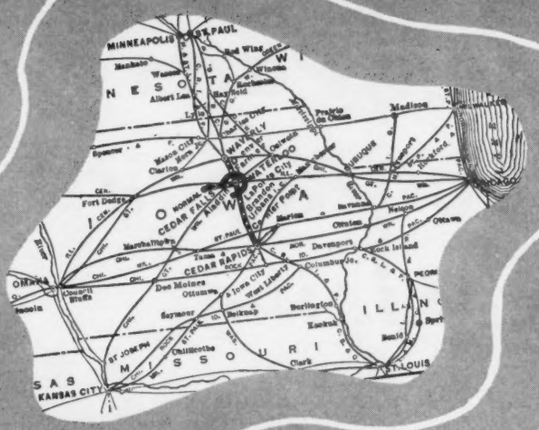

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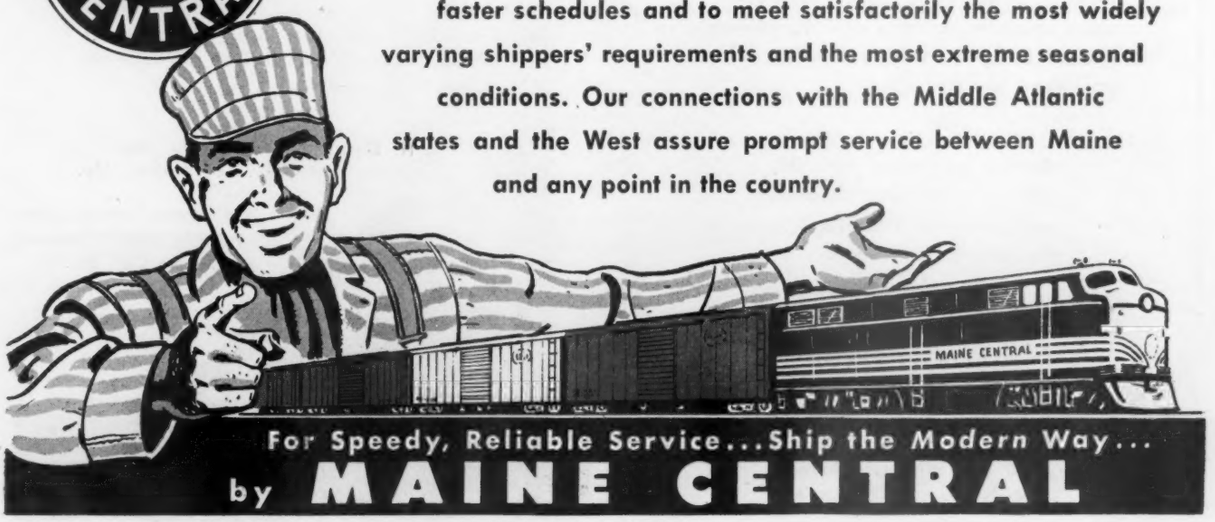

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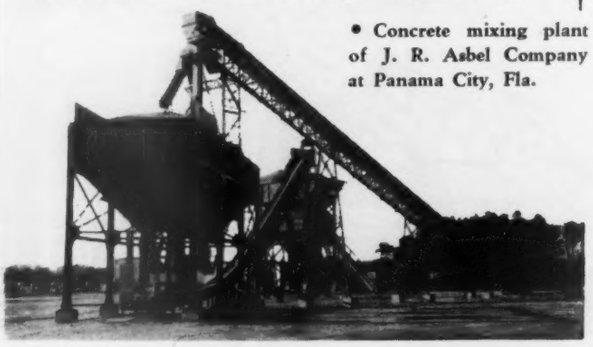

• Concrete mixing plant of J. R. Asbel Company at Panama City, Fla.

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